The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLVI. CHICAGO, ILLINOIS, MARCH 3, 1906. No. 9.

Original Articles

A NEW TECHNIC FOR BREAST AMPUTATION.

JABEZ N. JACKSON, A.M., M.D.

KANSAS CITY, MO.

I wish briefly to present the description of a new technic for use in radical operations for carcinoma of the breast. I devised this method of operation about eight months ago, and since then I have used it exclusively in all cases of this character with which I have had to deal. From this experience, though limited to eight cases, I believe that the method has certain elements of advantage, as well as originality, that justify me in presenting it to the medical profession.

The skin incision in this operation is begun at a point about one and one-half inches below the middle of the clavicle, in the sulcus, marking the interval between the deltoid and the pectoralis major muscles. From this point the incision is carried in a straight line along the sulcus, parallel to the inner border of the deltoid muscle, until it reaches the lower border of the pectoral fold as it terminates in the arm. This straight incision is all that is made in this early step of the operation, but for the sake of clearness the complete incision is outlined here, that the general picture thus may be better obtained.

From the lower border of the first incision the knife is now carried along the under margin of the pectoral fold to the chest, at a point which corresponds, as a rule, with the lower border of the mamma itself. The remaining portion of the incision is made in the form of an ellipse about the nipple, with its long axis nearly vertical, or, rather, obliquely, from above downward and outward to the outer quadrant of the breast. This ellipse is so planned as practically to make its outer curve parallel with the line of the first incision made, and thus to present, when completed, a quadrilateral flap with its base upward and entirely free below. This incision, of course, is carried through the skin and fascia down to the underlying muscular structures (Fig. 1).

In the actual procedure, as before said, only the first incision is used in the early stages of the operation; but, if necessary to give greater space, a portion of the incision splitting the pectoral fold may likewise be made. As this incision is carried down through the skin and superficial fascia, it exposes the fibers of the pectoralis major muscle converging well to its tendinous insertion in the humerus. At the lower point of this incision, where it curves along the under border of the pectoralis major, the index finger of one hand is now shoved up underneath the pectoralis major muscle and brought out again at its upper border, so that the entire pectoralis muscle is thus hooked up on the index finger, and by blunt dissection separated out to its tendinous insertion. If, however, one wishes to follow the suggestion of Dr. C. H. Mayo and leave the clavicular portion of the pectoralis muscle, this can easily be accomplished by bringing the finger up through the interval, usually well marked, between the clavicular and sternal portions of the muscle, and thus the clavicular portion can be separated and left in place. With the tendon of the pectoralis muscle thus lifted up, as shown in Figure 2, it is now divided by the scalpel very close to its insertion into the humerus. The muscle immediately retracts toward the chest and exposes, underneath, the pectoralis minor muscle invested

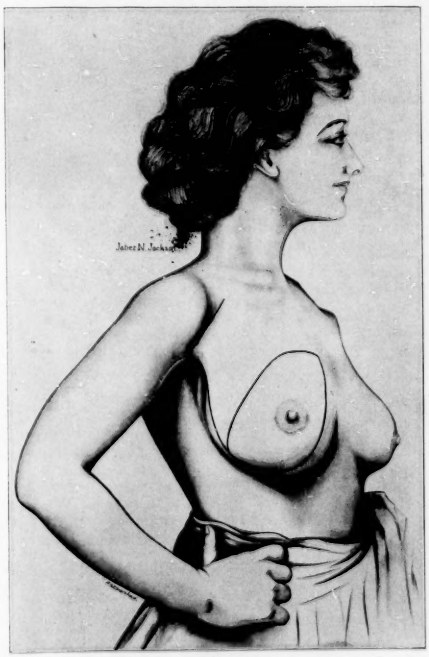


Fig. 1.—Outline of skin incision complete, showing formation of flap A.

in its fascia, which above runs to the clavicle and below spreads out over the chest walls. This can easily be exposed by blunt dissection by the finger, which is now likewise inserted under the fibers of this muscle, which is now isolated as was the pectoralis major. It is also divided (Figure 3) close to its attachment to the coracoid process of the scapula. As to the pectoralis minor, like the pectoralis major, also retracts toward the chest,

the wound is held apart by retractors or by the fingers of an assistant, and the axillary space is now widely exposed to view from the front. As a rule this exposure can be made without encountering any bleeding vessels which will require clamp or ligature. Likewise we now have a wide exposure of the axilla for thorough dissection, without in any way having touched the breast or made any extensive division of tissues.

The axillary vein is now in view, and to its outer side and parallel to it, an incision is made with the scissors of the fascia which surrounds the vessels. The fascia is now stripped off, usually by blunt dissection and gauze, supplemented by an occasional snipping with scissors; the operator works steadily from without inward toward the chest. and clearing fascia, glands, etc., as he goes. In this way the axillary vein and artery are isolated, and the branches supplying the axilla and going on to the chest are made plainly apparent (Figure 4). These vessels are at once double-clamped and divided between clamps. I have usually found it necessary thus to ligate about three or four sets of vessels. Time is saved by immediately ligating these vessels and then removing the clamps. Thereafter there will be no trouble with hemorrhage from the axilla, excepting, occasionally, from little veins in the cellular tissue further back toward the scapula or toward the chest. These incidental vessels, as a rule, will not be more than three or four in number and are usually ligated immediately after the clamping. Beginning thus at the apex and outer border of the axilla, fascia and glands are completely cleared by gauze and scissors dissection, working from the vessels inward toward the chest.

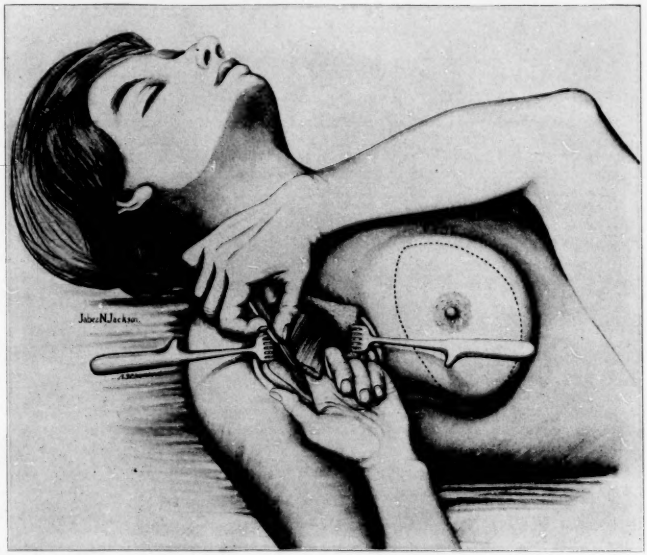


Fig. 2.—Division of pectoralis major muscle at insertion through primary vertical incision.

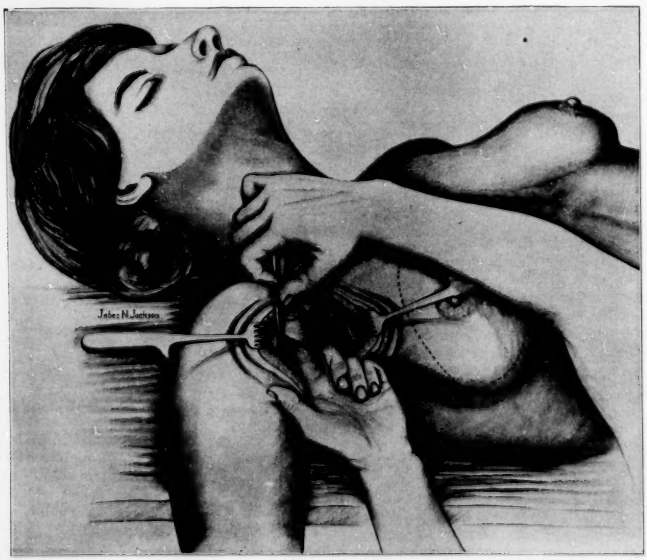


Fig. 3.—Division of tendon of pectoralis minor at insertion.

As this clearing of the deep axilla is completed, the

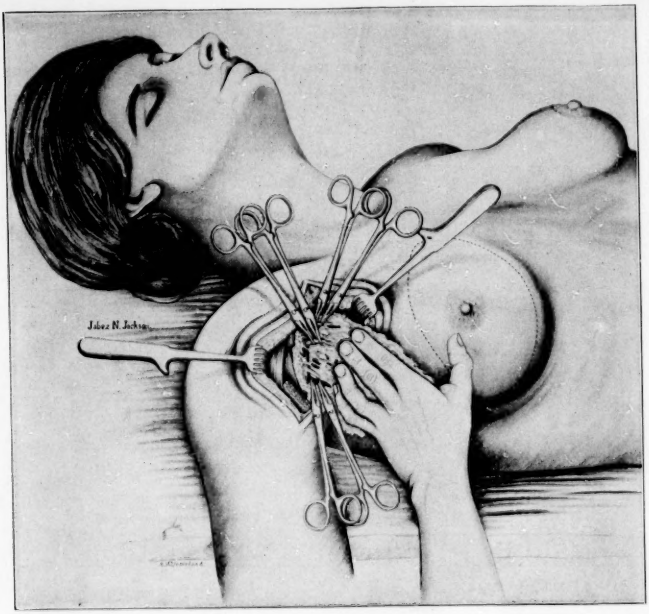


Fig. 4.—Clearing fascia and glands from around axillary artery and veins, isolation at branches to fossa for primary ligature.

original skin incision is also completed by carrying the horizontal incision over to the chest and marking the outer half of the ellipse so as to permit the flap to be raised and turned upward toward the clavicle (Figure 5), thus giving a deeper exposure of the attachments of the pectoralis muscle above and in front. It is important that a small tenaculum forceps should be placed at each angle of this flap when it is completed, as it will be of much service later on. The dissection is now completed usually with gauze, the tissues are loosened up underneath the pectoralis muscles under the breast and toward the chest. The point of attachment of the pectoralis minor to the ribs is cut from underneath, flush with the ribs and the costal muscles. From underneath the operator now loosens up the pectoralis major to its fixed points of origin from clavicle and sternum. While this is being done the breast is forcibly pulled back so as to expose the deep cavity of the wound. The pectoralis muscle is now severed from beneath, close to its points of bony attachment, and the perforating branches of the internal mammary which supply the vascularity of the breast are caught as soon as divided as they come through the chest wall (Figure 6). Usually two or three of these vessels will spurt, but they can be immediately caught with forceps and later tied. After the pectoralis major muscle has been entirely severed from beneath, the breast is allowed to drop back into its normal position, the skin incision is completed and the breast and the pectoral muscles underneath are finally clearly removed. Branches of the mammary artery which are clamped are now tied and the forceps removed.

Under these circumstances the skin incision practically does not bleed

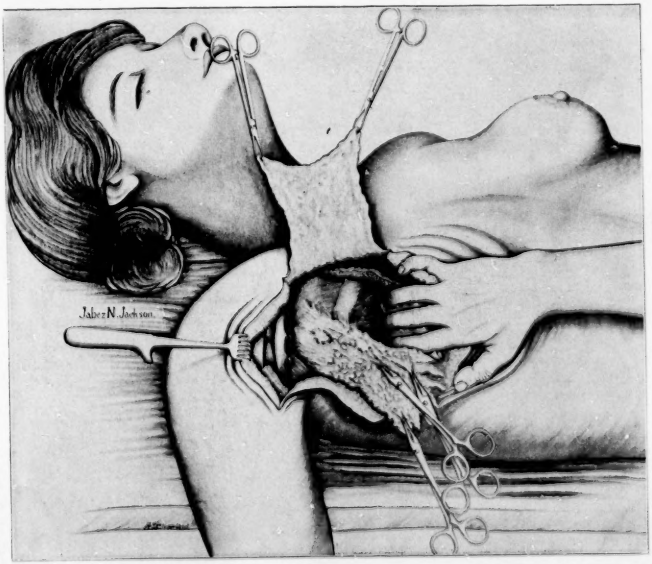


Fig. 5.—Flap completed and turned upward. Branches from axillary artery and vein ligated; dissection being continued from apex of axillary fossa downward and outward beneath retracted pectoral muscles.

at all, and it will be noticed that at no time during the operation were there more than a half-dozen clamps on the wound. As a matter of fact, the operation could easily be completed with from one-half dozen to one dozen clamps at the outside. This is made possible by the fact that all vessels are ligated as trunks at their points of origin instead of dealing with a large number of peripheral branches, as is usual in other operations. The extent of fascia dissected in this operation is the same as in any other thoroughly radical breast amputation.

The removal of infected tissue now being complete and the wound dry, the next step is to place the flap and close the wound; these also present points of distinct originality.

The quadrilateral flap of skin and superficial fascia which originally formed the anterior covering of the axilla is now stretched out

Fig. 6.—Axillary dissection completed. Division of pectoral muscles at origin *from beneath*. Mammary branches caught and ligated on division. Amputation completed.

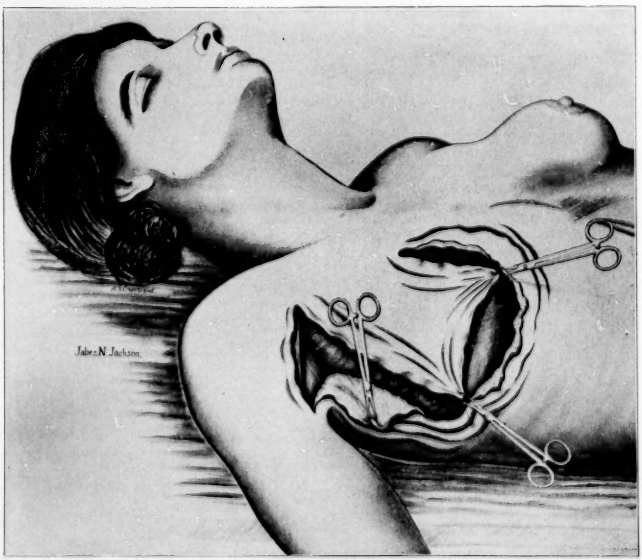


Fig. 7.—Amputation completed. Flap A, the corners of which are held by tenacula, is drawn over to cover the chest defect and the wound is closed by plastic adjustment. (The apparent laxity of the tissues is erroneous.)

by tenaculum forceps and transferred inward to cover the defect of the chest wall created by the removal of the skin of the breast about the nipple (Figure 7). This flap, which is one of the distinctive features of the operation, will always contract after it has been entirely loosened and will look as though it could be of but little service. A couple of tenaculum forceps in the angles, with probably another pair on either side, will spread it out until it covers a surprising amount of space.

As the flap is now drawn over on the chest, I usually fix it by attachment to the corresponding skin margin, as shown in Figures 7 and 8. Another distinctive point now consists in catching up, with the tenaculum, the margin of the lower portion of the pectoral fold, which represents the integument which formed the original floor of the axilla and which in thin

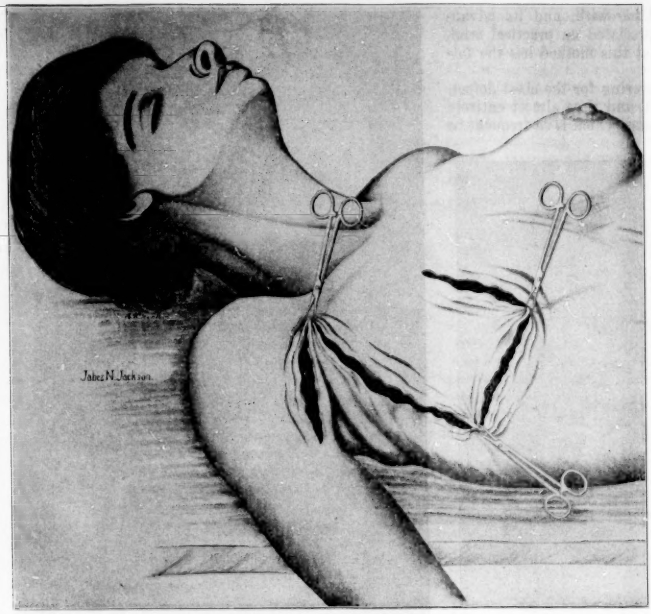


Fig. 8.—Flap in place and fixed by tenacula. Loose skin of original axillary floor drawn upward to complete covering and hugging about axillary vessels, thus obliterating fossa axillaris.

subjects is often very marked. The tenaculum on this margin is placed at such a distance from the lowest point of the first vertical line that when drawn upward it will bring this skin point up to the original beginning of the first incision beneath the clavicle. This maneuver brings the loose skin from the floor of the axilla closely up around the axillary vessels and does away entirely with the axilla as a cavity in the subsequent anatomy of the individual. These tenacula likewise are usually clamped and mark these fixed points of coaptation, as seen in Figure 8.

I generally now place an approximation suture of silkworm gut at these points to steady my subsequent suturing. The remaining portion of the incision may be closed either with interrupted or continuous sutures, as desired; or, as I have frequently done, by the use of subcuticular sutures of silkworm gut. It is most surprising, after this flap has been spread out and approximation properly made, how little tension there will be on the suture line. Frequently the subcuticular stitches will suffice without the use of multiple sutures. A stab puncture in the lowest recesses of the wound space behind furnishes opportunity for drainage tube.

When the operation is completed (Figure 9) it will be observed that there is an appearance which has been likened to that of a dipper, with its handle running vertically along the inner border of the arm, paralleling the deltoid, the bowl of the cup being represented by three lines, each at right angles to the other, on the chest wall. There is thus no opportunity for linear contraction interfering with the function or utility of the arm.

This operation will be much better understood by reference to the illustra-

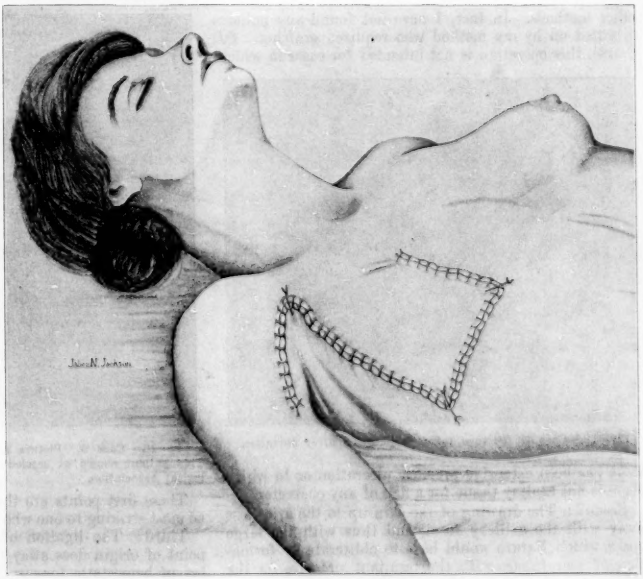


Fig. 9.—Suturing complete. Tension sutures at the angles. Drainage in axillary.

tions which are represented herewith, and its advantages will be much more appreciated on practical trial.

In conclusion, I believe that this method has the following advantages:

First: The flap forms a covering for the chest defect, as a rule without any tension, and thus almost entirely obviates the necessity of grafting, which is so frequent in

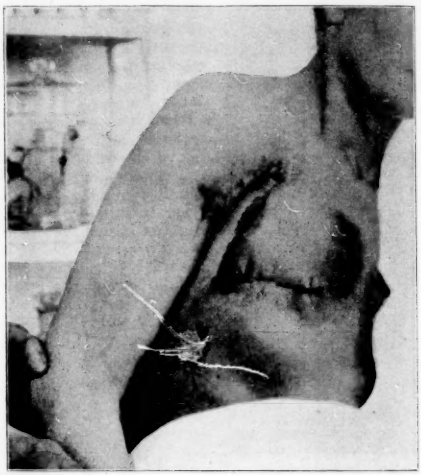


Fig. 10.—Case 2. Picture taken two weeks after operation.

other methods. In fact, I have not found any patient operated on by my method who required grafting. Of course, this operation is not intended for cases in which

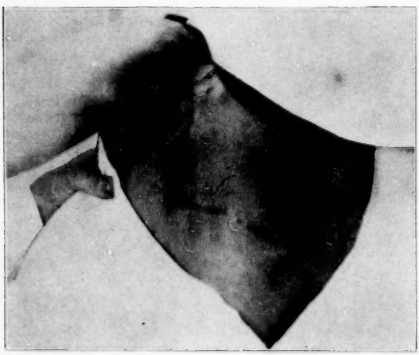


Fig. 11.—Case 3. Picture taken four weeks after operation.

there has been extensive previous ulceration or in which there is not healthy tissue for a flap of any character.

Second: The drawing of the skin up to the arm does away with the axillary fossa, and thus with the large space which Nature would have to obliterate by formation of scar tissue, with the resultant pressure on the axillary vessels and nerves.

Fig. 12.—Case. 4. Picture taken two weeks after operation.

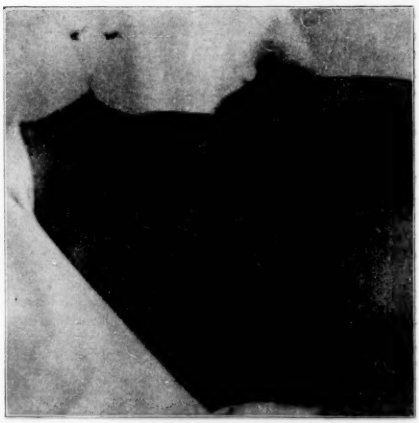


Fig. 13.—Case 5. Picture taken three weeks after operation. This patient shown at session of Western Surgical and Gynecological Association.

These first points are the ones which would probably be most striking to one who has not seen the operation.

Third: The ligation of all vessels at their nearest point of origin does away with the use of a large number of hemostatic forceps, which cause loss of time, to say nothing of the inconvenience of having a large num-

ber of instruments in one's way. I have in no instance used more than one dozen forceps in this operation, and can usually do the work with about six. The operation is thus shortened, so that, as a rule, I find that it requires from forty minutes to one hour or thereabouts to complete it. In fact, I have never run beyond an hour, even doing the operation slowly, as I have in most cases,

Fig. 14.—Case 7. Picture taken four weeks after operation.

for the purpose of demonstrating this new technic, and I have done the operation in forty minutes.

Fourth: The most noticeable feature to the onlooker, when the operation is done in the manner described, probably is the marked absence of hemorrhage, so that it can almost be called a bloodless operation.

Fifth: The entire technical portion of the operation is completed before the chest is exposed by removal of the breast; therefore long exposure of an enormous area of raw chest surface, with the attendant shock, is done away with. As soon, in fact, as the breast is removed the wound is ready to be closed.

REQUIREMENTS FOR A SUCCESSFUL CAREER IN SURGERY.*

LEWIS C. BOSHER, M.D.
RICHMOND, VA.

All of us can bear witness to the fact that to-day there are men engaged in the practice of surgery who, by reason of their lack of proper training, are thereby doing injustice to themselves, to the profession and to the public. Since there could be no greater mistake on the part of any young man than the selection of a specialty for which he lacks the necessary requirements, a general consideration of just what qualifications are needed as a basis for a successful career in surgery seems to me a subject worthy of discussion on this occasion.

So forcibly has this matter appealed to me for many years that very shortly after my election to this position I determined to take advantage of the opportunity of dealing with the subject on the present occasion, with the hope that my words, coming through this body of men, who are teachers of our great art, whose utterances are authoritative and whose precepts are accepted, might carry with them a certain amount of reflected authority and might serve to deter some at least from entering a field for which they are not equipped, and might even, perhaps, cause some others who are now rashly engaged in the so-called practice of surgery either to supply their deficiencies or to abandon the calling.

Although I had the privilege of hearing the oration of the chairman of the Section on Surgery and Anatomy of the American Medical Association at the Portland session, in which he treated the same subject in a most forceful, lucid and emphatic way, this seems to me no reason for abandoning my original intention, but rather a proof of the importance of the subject and an encouragement to follow up his opening, even though some similar thoughts may of necessity be dwelt on.

ATTRACTIVENESS OF SURGERY.

To the recent graduate in medicine no department of his chosen profession appeals with the same force as does surgery. While a student he has been impressed by the brilliancy of the results secured by his professors before his very eyes; at the meetings of the alumni the clinics in surgery have been crowded, while those in other branches have usually been either slimly attended or else attended as a compliment to the individual holding them rather than from actual interest in the subject; in most medical colleges the prominence of the professors of surgery in all faculty affairs is well known; while, considering the more material side of the question, he has little trouble in ascertaining that it is no unusual thing for a surgeon to secure for a single operation, occupying but an hour or two or even less, a fee greater than the entire collections of the general practitioner for a week's steady work, with broken rest and with cares and responsibilities innumerable. On leaving college, if he enters hospital service, these facts are impressed on him with even greater force; and later on, having himself entered the ranks of struggling practitioners, the same lessons are borne in on him with increasing emphasis.

Little wonder is it then that so many young medical men, bearing all these things in mind, decide that they, too, will enter this alluring field, where, they believe, they will effect such marvelous results, in brilliant cures, in abundant pecuniary reward, in the homage of their fellow-men, and, if moved by even higher motives, in the actual good they may do to suffering humanity.

These young men are all too prone to see but one side of the picture and to overlook the fact that here, as in all other pursuits, success comes only as the reward of special fitness.

The term surgery is still synonymous in the popular mind with cutting, and at once calls up visions of horrors of the operating room, with its rows of glistening instruments, the nauseating odor of the anesthetic, the insensible patient, and blood. Holding this view of surgery itself, surgical ability is commonly held to be identical with mere deftness of operative technic, while skill and promptness in diagnosis, the recognition of the possibilities of nonoperative measures, the power to distinguish between operative and nonoperative cases, the selection of the most suitable operation, judgment

* Presidential Address Southern Surgical and Gynecological Association, Dec. 12, 1905.

in knowing just how far to go—these and numberless other things of a similar nature, which constitute the real tests of surgical ability, are given little thought.

Were this failure to draw the correct distinction between the true surgeon and the mere skilful operator confined to the lay mind consideration of this subject on the present occasion would lose its point. But these same ideas, to a less exaggerated extent, it is true, find place in the minds of many of the young men for whose special benefit these remarks are intended.

PROFESSIONAL QUALIFICATIONS.

In a certain sense the preparation of the future surgeon may be said to begin before his birth, since blood will tell in surgery as elsewhere. Certainly the environment of very early life has a marked influence, for here the foundations of his character are laid, and even at this time there may be awakened in him a liking for the healing art which will have much to do with his selection of a career later on.

The importance of an academic education is too well recognized to require more than passing mention. Many a man has attained success in surgery without this advantage, but we are dealing with the rule, not the exceptions. This academic education should be truly liberal, both in quantity and quality, and should include as much as possible of studies of a scientific nature, especially biology, physics and chemistry. Of these three branches physics will prove of the greatest use to the surgeon, while biology and chemistry are branches of more practical value to the general practitioner. But the scientific habit of thought can not be too soon established, hence every study of this class is of service. At this time, too, will be laid the foundations of that general culture which will prove an invaluable possession in after life.

At the very beginning of his medical studies the best available school should be chosen. While at the medical college our future surgeon, no matter how firmly he may have decided on surgery as a career, should secure as thorough an all-round medical education as possible, not neglecting those branches which, as seems to him then, are not directly related to the practice of surgery. Only thus can he attain that breadth of view which will later on enable him to realize that the patients who come under his care are subject, in addition to the condition for which he is especially consulted, to the many other ills, both medical and surgical, which afflict mankind in general. Only thus can he appreciate the influence of mental conditions and gain an insight into the natural recuperative powers of the human system, both of which should be factors in influencing his decision as to the propriety of operating and in considering the question of postoperative recovery. Only thus, in short, can he hope to avoid the warping which is only too commonly seen in specialists in every branch, and which, so far as it relates to surgery, has given rise to the not altogether unjustifiable popular dread of consulting a surgeon, lest doing so should of necessity mean submitting to an operation.

After the completion of his course at the medical college a term of hospital service is nowadays considered an absolute essential. No matter what advantages the medical college has afforded in the way of clinics and opportunities for practical work, the newly-fledged doctor must learn in the school of actual experience. If he has real ability he will undoubtedly learn in private practice, but it will be only after many and costly mistakes, many of which may be avoided by proper hospital training.

In the matter of deciding what hospital he shall enter (providing it is with him a matter of choice) the personnel of the attending staff and the rules as to the duties of the house staff are the two points of chief importance. Service in the largest and most pretentious hospital under men of mere mediocrity and with improper discipline is far less to be desired than a position in a hospital where, perhaps, the cases are few, but are seen under a master, and where the interne's time is divided into terms of service in both the medical and surgical departments, in the order named if he aspires to enter the practice of surgery afterward. In the best hospitals to-day the new recruit occupies at first an entirely subordinate position, gradually being given more and more responsibility as he becomes qualified for it.

Having completed his term of hospital service, many young men find it to their advantage to undergo a still further apprenticeship as special assistant to some surgeon of prominence. This affords the opportunity to observe more intimately the methods of some single man of ability and is of further value in giving an insight into the manner of dealing with private patients, a knowledge of which often decides between success and failure.

What has been said of the necessity of other things besides mere operative ability must by no means be taken as minimizing the importance of the latter. The diagnosis having been made, and after the exercise of proper judgment in deciding as to the advisability of operating and as to what operation should be undertaken, the best surgeon is he who possesses the greatest operative skill. This, though perhaps the most easily acquired of all the accomplishments of the surgeon, demands longer experience. Here, too, as in the attaining of other acquirements, the time spent as hospital interne and as assistant to some able surgeon will prove invaluable. Daily observation of the methods of others who possess the operative ability he himself wishes to attain is a prime essential. Thus will he unconsciously become familiar, in a practical way, not only with the principal operations themselves, but also with the thousand minor details which are indispensable. He will, moreover, learn how to meet the many emergencies which inevitably arise during an operation and which demand prompt and decisive action, and he will have impressed on him the necessity of being ready at any stage of the operation, to modify the opinions formed beforehand, and, in consequence, similarly to modify the operative procedure, either in whole or in part. He will learn how to bring to bear that nice judgment in deciding, while operating, between those cases which will admit of the most deliberate, though never dallying, attention to the minutest detail and those in which it is imperative to keep the patient as short a time as possible on the table, even at the sacrifice of otherwise important details of the operation.

After this he will still have much to do before he is himself an able operator; for all things appear easy and simple when done by a master hand, and no amount of mere observation of the work of others can of itself make a good operator. Operations on the cadaver and on the lower animals are invaluable in conferring technical skill without any attendant risk to human life or well-being. Along with this he may undertake some of the simpler operations on the human subject, gradually advancing to those of greater difficulty in proportion as his experience in diagnosis becomes more extensive, his judgment more trustworthy, his eye and touch more practiced and his hand more steady.

During his entire hospital experience he will be constantly impressed with the fact that the possession of mere brilliant operative ability, unless combined with the other qualifications of a surgeon, may make a man a dangerous surgeon rather than a great one. For the same reason antiseptic and aseptic surgery, whose benefits to the human race can scarcely be overestimated, are not an unmixed blessing, for, by the very safety which they confer on surgical operations, they enable many men lacking the qualifications of a true surgeon to undertake capital operations with immunity from immediate ill consequences.

In connection with the value of the training as hospital interne a few words as to the general attitude of our young surgeon during this period of his career seem to me important. It is no uncommon thing to find even the newest recruit in hospital service undertaking to assume an importance utterly out of proportion to his ability, or, rather, in inverse proportion thereto. This is shown most prominently in the tone assumed in speaking of the members of the attending staff, finding expression not infrequently in actual criticism of his superiors in the presence of his fellow members of the house staff, before the nurses, and, not infrequently, before the patients themselves. Leaving out of discussion the woeful breach of professional ethics which such a course involves, these young men should realize that they can best secure the full advantages of their hospital training by confining their attention strictly to their own especial duties. The really valuable assistant is he who does well the things falling in his proper domain. If he does these conscientiously he will have neither time nor inclination to indulge in meddlesome criticisms, and by doing his own part well he will not only inspire such confidence as will lead his superiors to entrust to him work of ever increasing importance, but he will gain insight into the responsibilities resting on a surgical assistant, which will stand him in good stead when he himself shall need help in this direction.

Having completed his college course and served his apprenticeship as hospital interne, and perhaps as special assistant, our young man is now ready to start off on his own responsibility. In some cases this step is made easy by his now being taken into partnership by the surgeon to whom he has acted assistant, but usually this is not the case, and at this time he casts off from his moorings and begins an independent career. And now, no matter how thorough his training, days of discouragement are likely to follow, days during which he may be further disheartened by seeing men of far inferior parts succeeding by means of tricks which he would scorn to employ or perhaps by means of some special pull. His attitude during this time should be that expressed in the words of Confucius, who said: "I will not be concerned at men's not knowing me; I will be concerned at my own want of ability." If he is all right in the last respect, gradually, with such work as will come his way (some of it from those who have all along been watching his career, and some of it thrown in his path by his former associates), and, especially, sustained by the knowledge of his own fitness and power to cope with whatever may come along, success will surely follow.

Most men at this stage of their careers find it necessary to take any kind of practice that offers. This is a fortunate state of affairs, since the same reasons which made it advisable for our young man to neglect no branch of his medical studies as a student now make it important for him to acquire that breadth of view which is notably absent in the man who settles down too early in life to the exclusive practice of a specialty. As his work increases he may gradually find it possible and advisable to confine his attention more and more to surgery alone.

GENERAL QUALIFICATIONS.

Besides the special qualifications which have thus far been considered, it is scarcely necessary to do more than merely mention the many requirements of a general nature, which, while of essential importance in the development of the able surgeon, are of equal importance to success in any shape of life. Robust health, tireless energy, rigid honesty, temperate habits are requisites in any successful career. Attractive personality and abundant *savoir faire* are desirable here as in every calling in which one has much to do with one's fellow-men.

It may be confidently asserted that any young man equipped by nature and by training along the lines above laid down, and who has given careful thought to the selection of a proper field for his activities, may count on a reasonable measure of success as a surgeon. There are in our country to-day thousands of men who have thus risen to responsible position and who may be regarded as successful surgeons. Of these thousands, a considerable number have gone further and have come to be recognized as surgeons of prominence, while still others, a very few, have attained such eminence as to be recognized as the real leaders of our profession.

Will the means by which these last have reached their present position admit of successful analysis? Not to more than a limited extent; for here, as in all cases where we have to deal with true genius, there is an elusive something which ever evades our grasp. Yet we can usually understand, in those instances which come under our immediate notice, somewhat of the factors which have contributed to the end. Unusual energy and determination, courage which never fails in the face of difficulties or even of temporary defeat, quickness of intellect in placing at their true value the results of the research of others, thus avoiding the error of being misled by attractive fallacies, while, at the same time, promptly seizing and applying discoveries of real value; boldness of initiative, never going to the extent of dangerous radicalism; broad views in dealing with one's patients, with one's fellow-practitioners, and with the world at large; and, lastly, that indefinable something which we call personal magnetism—these are among the factors which may serve to convert mere success into preeminence.

A single small class of men may perhaps constitute an exception to all that has thus far been considered. In every lofty calling in life we find a few men—at times some of the very ablest of their profession—who apparently defy all the ordinary rules which apply to their fellows in the craft. And so, as in similar cases in other fields, we occasionally find men who seem to have been born surgeons, who with no apparent external advantages over even the least favored of their fellows—save such advantages as their own persistence, urged by unquenchable fire of ambition, has wrested from adverse environment—go on to achieve not only success, but distinction and fame. These are but the exceptions which prove the rule, and even to such men at the beginning of their career, the same advice should be given, since thereby the unfit man might be restrained from committing a fatal error, while he who has in him the fire of true genius will not be deterred by words of any man.

In conclusion, we must realize that this is a subject which concerns mankind in general; therefore, is it not

incumbent on us, as teachers and practitioners of surgery, to make it plain to the public that there is a material difference between the trained surgeon and the novice? This education will enable the public to discriminate in a wholesome manner and will ultimately have the effect of rendering it apparent to the candidate for surgical practice that he must properly equip himself before he can stand before the world as a representative of the great surgical art.

422 East Franklin Street.

A CRITICISM OF SOME OF THE THEORIES REGARDING THE ETIOLOGY OF GOUNDOU AND AINHUM.*

F. C. WELLMAN, M.D.
BENGUELLA, WEST AFRICA.

My interest in the two rather bizarre tropical affections mentioned in the title of this paper has lately been increased by the opportunity of examining several cases of each disease. In reading over the views commonly held to account for their origin, one is struck by the fact that most of them are purely theories and, like most theories, not free from flaws. A short review of some of these may help to clarify what little knowledge we possess concerning the possible factors giving rise to the obscure conditions known as goundou and ainhum.

GOUNDOU.

SYNONYMS.—*Anakhre* (Agni name), Henpuye (Gold Coast) *Gros nez, Mti* (Zanzibar), Big Nose, Dog Nose, *Uyulue* (Bantu name).

There have been proposed, among others, the following theories to explain the presence of the growths:

1. That they are a sequel of yaws (Chalmers).
2. That the condition is a disease *sui generis* (Braddon).
3. That the condition is an example of atavism referable to some tribal peculiarity of the original negro stock (Strachan).
4. That it is a manifestation of syphilis (Friedrichsen).
5. That the tumors consist of malformations due to non-union of the nasal and frontal bones (Keng).
6. That they are caused by the presence of larvæ of insects in the nostrils (Maclaud).

The theory that goundou is a sequel of yaws has been put forward by Chalmers, Mell and others. My objections to it may be summarized as follows: (1) The only persons suffering from uyulue (goundou) whom I have seen in Portuguese West Africa (two in number) denied ever having had yaws showed no traces of that disease and were from a district where yaws is almost unknown, a rare imported case being noticed only at long intervals. (2) The symmetrical double growth is against this explanation. (3) Its general geographical distribution does not agree with that of yaws. (4) According to reports, a much larger proportion of men than of women are affected, while in yaws both sexes are affected without distinction.

The second theory that it is a disease *sui generis* is really not an etiologic theory at all, as it attempts no explanation of the symptoms. If by the phrase is meant that goundou is due to a specific micro-organism, it is enough to reply that no such organism has been described.

Strachan's suggestion that the condition may be an instance of atavism is not reasonable in view of the fact that the structure of the tumor, according to those who have studied it most carefully, shows it to be the product of an inflammation. Strachan's observations were made, I believe, in the West Indies, and at least one of his cases was congenital.

The connection of goundou with syphilis is open to most of the objections against its identification with yaws.[1] In my own cases syphilis must be excluded, with the alternative of considering the two cases of goundou (which showed no other symptoms whatever) the only examples of that infection ever seen in an isolated interior bush tribe which I had under observation for several years. Another point is the fact that the coast tribes of southern Angola, among whom syphilis is rife, are no more subject to goundou than the people above mentioned.

The hypothesis advanced by Dr. Keng in the far East that goundou is a congenital malformation due to lack of union of the nasal and frontal bones is founded on the study of one case in which hydrocephalus developed with the tumors. A comparison of his description with my case notes leads me to believe that his case was not goundou at all. The facts that the tumors were soft and pulsating and painful when touched would alone distinguish them from the hard, bony, insensitive growths described by all observers in Africa.

Maclaud's original idea that the process is, in the first instance, set up by the presence of dipterous larvæ in the nostrils has not been confirmed by the researches of later observers. Manson points out, too, that the symmetry of the growths is difficult to account for on this hypothesis.

It will be seen by this rapid résumé of ideas regarding the cause of the peculiar affection under consideration that none of the explanations proposed rest on anything more definite than conjecture. The tumors are doubtless a hyperplasia, probably due to an osteoplastic periostitis with a very definite cause which, however, has not yet been demonstrated.

AINHUM.

SYNONYMS.—*Guduram* (W. Africa) *Quijila* (Brazil), *Banko-Kerendè* (Soudan) *Sukha-pakla* (India) *Exérèse spontanée, Bwola, Ombanja* (Bantu names).

I shall consider in connection with this affection the following etiologic theories:

1. That ainhum is a lesion of leprosy (Zambaco).
2. That it is caused by injuries to the toes (da Silva Lima).
3. That it is due to a trophoneurosis (Scheube).
4. That it is a circumscribed scleroderma (Corre).
5. That it is a congenital spontaneous amputation (Proust).
6. That it is the result of self-mutilation by ligatures, the wearing of toe rings, etc. (Gongora and others).

As to the first hypothesis, I have several times lately seen the suggestion that ainhum may be a manifestation of leprosy. Some of these communications enter into the question with considerable definiteness, and in one instance several cases are cited in which all of the patients are reported to have had leprous parents or relatives and to have evinced signs of leprosy aside from ainhum. All this is, of course, Zambaco Pasha *rediri-*

* Published under the auspices of the American Society of Tropical Medicine.

1. I do not here enter into the discussion of the identity of yaws and syphilis as maintained by Hutchison, and more recently by Scheube in his "Die venerischen Krankheiten in der warmen Länder," p. 51. For the purposes of this paper the clinical manifestations as seen in typical cases quite suffice.

vus. This observer brought to the study of the question an unusually wide and accurate knowledge of leprosy, but seemed to have acquired a habit of annexing various complaints in order to bring them into line with his specialty. An instance in point is his contention that Morvan's disease in Brittany is only a mild form of leprosy, the virus having become attenuated through the isolation of a comparative old population. The identification of Morvan's disease as a form of syringomyelia did not, however, deter Zambaco from later claiming ainhum, on theoretical grounds alone, as another example of attenuated leprosy. The question which Zambaco proposed to himself may be stated in the words which form the title of his communication to the Academy of Medicine in July, 1896: *"L'ainhum des auteurs, constitue-t-il une entité morbide distincte, ou bien n'est-il qu'une modalité de la lèprose?"* and the verdict enunciated was *"L'ainhum des négres. . . . est une lèprose légère, monosymptomatique, dactylienne podique, c'est-à-dire mutilante des pieds."* Such a conclusion is, of course, permissible from the hypothetical side, but on clinical grounds alone it should be remembered that the ainhum-like constrictions sometimes seen in leprosy nearly always affect the fingers and are always connected with other symptoms of leprosy. One could wish, however, that the question had been approached from the pathologic standpoint. The bacillus of leprosy has been found in every tissue of the human body, except the muscles, and has a special predilection for the skin. It would certainly seem fair, then, to demand a demonstration of this bacillus in at least a few of the cases exploited as *Lepre ainoide.* The fact that the geographical distribution of leprosy and ainhum (to say nothing of the racial distribution of the latter) does not coincide detracts, too, from the force of Zambaco's theory, which later authorities seem to adopt on the strength of his name and in connection with it carefully to shun any reference to *B. lepræ* or other features which may be rigidly tested by scientific methods.

In this region, leprosy is not uncommon, while ainhum is comparatively rare. I have collected three cases, however, concerning which I have recently published a note containing the following observations:

1. In none of these cases is there a leprous lesion demonstrable.

2. In none of these cases is the characteristic facies familiar to those who are acquainted with negro leprosy present, nor are there any of the other early clinical symptoms of leprosy.

3. In none of the three cases is there a family history of leprosy (I have seen the parents of two of the men and the father and grandfather of the third).

4. Only one of the patients comes from a district in which leprosy is known to exist.

5. In none of the cases can *B. lepræ* be demonstrated in the nasal discharge by Ziel Neelson's method, and in one case in which I had amputated the offending toe no bacilli could be seen in a section of the integument from the constricted portion stained after the same method. The histologic architecture, too, is different from that of leprosy, showing only the familiar fibrosis and atrophy common to all cicatricial tissue.

Consequently, I must agree with de Brun (who reported the case on which Zambaco based his opinion above quoted) that *"l'absence, dans les cas d'ainhum, du bacille de Hansen, semble démontrer qu'il ne s'agit pas d'une manifestation lépreuse."*

The hypothesis originally put forth by da Silva Lima to account for the lesions was that the toes are cut by sharp grasses and the like, and the contracting cicatrix produces the condition as usually described. In opposition to this theory is the fact that the ailment has been noticed in negroes who usually wear shoes. But, as Manson remarks, "unless it could be shown that such individuals had always worn shoes this objection to the explanation offered would not apply." Another objection to da Silva Lima's theory is that the disease does not occur equally in all barefooted races. Even in Africa the geographical distribution is capricious. Again, it is stated that in Brazil ainhum is becoming less common among the negroes who nevertheless go barefooted as in former days.

Scheube's suggestion that the lesions are the result of a trophoneurosis makes no attempt to explain the origin of the condition. Such a theory is in the nature of a *tertium quid,* and only puts the difficulty one step farther back.

The view of Corre and Despetits that ainhum is a circumscribed scleroderma is open to the same criticism. Scleroderma is an induration of the skin largely due to hyperplasia of the connective tissue and muscle fibers of the corium. Its etiology is not known, although it has been connected with disease of the thyroid gland. It has also been described as following acute diseases and exposure. The local nature of the lesion in ainhum does not accord well with these views. The thyroid glands in the three patients I examined were apparently normal.

An idea advocated by some (principally by Proust) is that we have to do with amputations which come about by constrictions of amniotic filaments during fetal life. Scheube well urges against this view the facts that such amputations "are congenital and occur on various parts of the body; they are not limited to the toes, are generally multiple and frequently occur simultaneously with other deformities; they, therefore, differ essentially from ainhum."

The wearing of rings on the toes can hardly be seriously entertained as a cause. In the first place, one never sees or reads of rings worn by African natives on the little toes alone. Again, few tribes wear rings on the toes at all, and if the wearing of rings caused the affection the hands would be affected oftener than the feet. The statement that ainhum is self-mutilation through tying strings lightly around the toes is groundless and has not been confirmed.

In conclusion, the above review teaches us that no definite and undisputed cause for the lesion has been advanced. I think that there is most to be said in favor of da Silva Lima's theory. Manson puts the case to the best advantage when he suggests that the condition "is provoked, at all events in the first instance, by wounds so easily inflicted on bare feet in walking through grass or jungle. The fold of skin in which the lesion of ainhum commences is very liable, especially in the splayed-out toes of the negro, to be wounded in this way. If we examine the under surface of the joint flexures of the toes in many individuals of this race, even in those not affected with ainhum, we often find the skin, particularly at the proximal joint of the little toe, thick, rough, scaling and sometimes even ulcerated. One can understand that continual irritation of this sort, produced and kept up by wounds from sharp grasses, would in time give rise, especially in the dark-skinned races so prone to keloid, to fibrotic changes in the derma, which might very well end in a sort of linear cicatricial contraction and ultimately in slow atrophying strangulation of the affected member."

I would insist that the groove around the toe in this

affection is, both macroscopically and histologically, a cicatrix. A probable factor in the prolonging of the irritations and inflammations set up by wounds and bruises at this point (which I have never seen mentioned by any writer on the subject) is the chigger, *S. penetrans*, which seems to have a predilection for this particular spot, especially if, as is so often the case, the skin be cut or torn. As to the fatty and atrophic changes in the amputated toe I use the words of McFarland, that their "true cause is not determined; it may be trophic or it may depend on local cicatricial formations."

TUBERCULOSIS AND PATENT MEDICINES.

G. R. POGUE, M.D.
DENVER, COLO.

Since the beginning of the present campaign against tuberculosis a vast amount of literature bearing on the subject of preventive measures and cure in regard to the disease has been distributed among the laity. Besides what has been distributed by those desiring to educate the public, numerous articles have appeared in magazines. Almost every writer dwells on the point that there is no medical cure for tuberculosis and everything is laid aside for the so-called outdoor treatment, which all admit is the most important part of the treatment for tuberculosis when properly administered.

In our anxiety to educate the public on the subject we overlook the result of our therapeutic nihilistic statements, which often leaves the poor victim of tuberculosis convinced that a physician can give him no aid, as it has been acknowledged that there is no cure for consumption. In his fight for life and health he naturally turns to those who "promise" him relief. He eagerly reads every advertisement that comes his way, and tries one "remedy" after another, for, with the consumptive, while there is life there is hope. We do not have to go far to see the results. When one shark has got all the money he can out of the victim another is ready to pounce on to him with a "new cure." In this way a great percentage of the vast army of tuberculous patients becomes a revenue to the "patent-medicine" shark and the advertising quack, with his "sure-cure" and fake testimonials. That percentage is increasing every day through our means of false education, and the advice of the attending physician is set at naught, because patients have been pre-educated and taught the false doctrine that outdoor life is all that is required and "the doctor can do nothing to help cure consumption."

During a conversation recently with a prominent pharmacist he made the statement that sales in patent medicines had fallen off 50 per cent. in the last three months, and incidently remarked that he seldom sold certain preparations except to consumptives. "They will drink any old thing so long as it is advertised to cure consumption." Now, on the one hand, we are endeavoring to educate the public in regard to the dangers of patent medicines and their uselessness, while, on the other, in trying to educate the masses as to the dangers of spreading infection and the best means to cure a certain disease, we are driving a certain class of individuals into the folds of the "patent-medicine" vendor and the advertising quack.

To be sure, we have no specific remedy for tuberculosis to the exclusion of every other remedy or measure. Nor have we for any other disease. What would be the result in a case of tetanus were we to rely on a few injections of tetanus antitoxin without a knowledge of its action and how to use it in the different stages of the disease or in suspected tetanus infection? What would be the mortality in diphtheria were we to simply administer a dose of diphtheria antitoxin and then leave the patient to do as he deemed proper? Antitoxin has a specific action in diphtheria, but notice the anxiety of the attending physician and the special care he takes of his patient for several days, watching for the various complications which may occur; ready to check them if they appear.

Other acute diseases, such as pneumonia and typhoid fever, are caused by micro-organisms, and we have no specific remedy for them, but we do not preach broadcast over the land that there is no medical aid that can be given to patients suffering from such diseases. That these individuals require the care and advice of skilled physicians is a fact that none will dispute.

Tuberculosis is a slow disease, often requiring years to destroy its victims. It is also a disease with a tendency to recovery, if recognized early and properly handled, and during its long course the patient needs the advice and care of the skilled physician until the disease is arrested, and then supervision is required for some time after.

What does a layman suffering from tuberculosis know about recurrences, aspiration pneumonia, pleurisy with effusion, empyema, etc.? He does know that when certain of these conditions occur in the course of his disease, that he feels worse, and, if he be one who has lost faith in his physician through our newer education, he straight way goes and "fills up" on some dope containing opium or alcohol, perhaps both. We all know the results.

Climatic resorts to which consumptives flock seeking a return to health are a bonanza for the advertising quack and "patent-medicine" vendor. The stock argument of these sharks is that members of the medical profession have no cure for tuberculosis, and that physicians acknowledge this, while each of these "quacks" claims to have some "great" secret remedy discovered by some "eminent" man and that it is a "sure cure." The poor consumptive is only too ready to grasp at any help that may be offered him, and in the present condition of things these are the only men who "offer" anything, so far as a great many of the public see.

The high percentage of "cures" or arrested cases in sanatoria does not depend on the patient getting better air or nourishment than can be had elsewhere, but on the constant supervision of the patients by skilled physicians and the proper administration of therapeutic measures suited to the requirements of the individual patient.

Up to the present time only a small percentage of those suffering from tuberculosis have been treated in sanatoria in this country, and the balance are scattered over our broad land in all conditions and stages of the disease, numbers of them vainly hunting for some one to hold out a hope of relief. Is it any great wonder that the uneducated or falsely educated easily fall a prey to the advertising quack?

It would be well for the community at large if some of our therapeutic nihilists would turn their talents in some other direction, and, if they wish to write for the education of the laity, write on some subject which the laity may understand and be benefited thereby.

The medical profession, as a whole, is an educated body and will eventually work out the therapeutics of tuberculosis, as it has in other diseases. In the mean-

time individual physicians will use the knowledge and skill they possess, as they have always done, for the welfare of their tuberculous patients and the community at large, teaching hygiene and prophylaxis and guiding their patients to renewed health.

SURGICAL REPAIR OF INJURED NERVES.*

J. SHELTON HORSLEY, M.D.

Professor of Principles of Surgery in the Medical College of Virginia; Surgeon to Memorial Hospital.

RICHMOND, VA.

The principles of nerve suture are so intimately connected with degeneration and regeneration of peripheral nerves that a brief review of the histologic process involved may not be inappropriate. The method of regeneration of a mixed nerve has been the subject of much discussion, and even now there is no view that receives the general sanction of neurologists. The Wallerian or continuous theory, which claims that regeneration of the axis cylinder occurs from the central stump only, is being somewhat discredited. Recent researches tend to confirm the discontinuous theory or some of its modifications. Huber and Howell, in 1892, and later Bethe of Strassburg, have shown quite definitely by numerous experiments that in young animals regeneration of an injured nerve may be practically complete without any connection with the central end. In older animals regeneration without connection with the central stump also occurs, but is imperfect. Schütte,[1] after an exhaustive review of the literature, corroborates this and maintains that degeneration always occurs after division of a nerve, no matter how accurate the approximation or clean the wound, though degeneration and regeneration may proceed simultaneously. As would be expected, the destructive effect of suppuration increases degeneration in the central end. While Schütte concludes that central connection is not necessary to regeneration in a peripheral nerve, it is true that such connection with the so-called trophic center must sooner or later be made in order to preserve the nerve in a healthy condition. Of course, there can be no physiologic function without this, no matter how perfect the anatomic repair may be. It is also true that regeneration is more prompt and more nearly perfect when the peripheral and the central ends are united than when they are separate.

It has been shown by a number of investigators that if a severed regenerated nerve is again cut, degeneration will take place in the distal segment, but the segment between the first and second cuts will not degenerate to any marked extent, though it has been entirely separated both from the cord and the peripheral segment. There seems to be no satisfactory explanation of this phenomenon, but its occurrence shows that neither the ganglionic cells of the spinal cord nor the peripheral nerve endings are essential to regeneration—a fact that might prove valuable where there had been multiple injuries along the course of a nerve.

In view of the constant degeneration of the peripheral segment of a divided nerve, it is somewhat difficult to explain the early return of function in many cases. Thus, Victor Horsley[2] mentions a case of suture of the ulnar nerve followed in twenty-four hours by return of sensation in the little finger. Peterson[3] reports a case in which the sciatic nerves of a dog were used to bridge a defect in the ulnar and median nerves in man with return of sensation the day after the operation. Two weeks after the operation, sensation was almost complete and the natural color of the hand was restored. There are many other reported cases following a somewhat similar course. Victor Horsley says they may be explained as follows: If a nerve is cut and the freshly divided ends are united, two excitable masses of nerve protoplasm are brought into contact, and one may conduct stimulating impulses from the other just as when two freshly divided pieces of muscle are fixed together excitement of one piece will produce contraction of the second by transmission of the electric energy which caused contraction of the first piece. For a few days after suture of a nerve the excitability of the nerve protoplasm remains active, then it gradually disappears as a rule, though occasionally it is permanent.

SYMPTOMS.

The symptoms of an injured nerve depend to some extent on the character of the injury. Complete aseptic division of a mixed nerve results in abolition of motion and sensation in the area supplied by this nerve and in simple atrophy, but no trophic disturbance, such as glossy skin or blebs, results. If, however, the lesion is an irritating one, trophic symptoms may appear, though the destruction of the nerve is only partial. Such disturbances occur after suppuration involving a nerve, or the gradual encroachment of a tumor or callus, or after constant pressure from a dense cicatrix. Pain is not present if the destruction of the nerve is complete and of a non-irritating nature. When the whole nerve is not severed, or if the lesion is of an irritating nature, pain may be severe and is due to the abundant supply of sensory nerves to the nerve sheath, which are not only excited by the injury, but stretched by the resulting vasomotor paralysis along the nerve. Electrical reactions, either galvanic or faradic, depend on the ability of the nerve to functionate to some extent. A nerve that has completely degenerated can no more convey electrical stimulation than could a fibrous cord, yet the fact that such stimulation fails to produce a contraction does not necessarily mean the complete absence of all nerve fibers, for some may exist, yet be so few in number and so feeble in conducting power as to produce no appreciable reaction.

TIME OF OPERATION.

The time which should elapse after traumatic paralysis of a nerve before operation for its relief is a question of much importance. B. Sachs[4] says three and a half months after facial palsy is too soon to consider operation. Dr. Hammond mentioned the case of a boy who developed facial palsy after a mastoid operation, and, without any attempt at nerve suturing, motion in the affected muscle was first noticed 15 months later. Henricksen[5] thinks it unwise to wait over a month if there is no improvement. Others advise waiting as long as 18 months before operating. Much depends on the character of the injury. If the nerve has been divided by a clean cut, as after a stab wound, and primary union has resulted, the surgeon would be justified in waiting 12 or 18 months for the normal functions to return; but if the injury was a crush, or if suppuration resulted,

* Read before the Southern Surgical and Gynecological Association, Louisville, Ky.

1. Cent. f. allgemeine Pathologie, vol. xv, p. 917.
2. Practitioner, August, 1899.
3. American Jour. Med. Sciences, April, 1899.
4. THE JOURNAL A. M. A., vol. xliv, p. 1142.
5. Lancet, April 18, 1903.

two or three months should be all the time allowed to elapse without improvement. When there is compression, as from callus or a tumor, operation should be performed at once. No operation for nerve suture should be abandoned because of the length of time that may have elapsed since the trauma. While regeneration and good functional results are more liable to occur when there have been only a few months from the time of the injury to the date of operation, still a number of successful cases are reported where many years have elapsed since the injury. For instance, Brenner[6] records a case in which successful suturing was done on the median nerve 10 years after the original injury.

METHODS OF OPERATING.

Before mentioning the different procedures used for the repair of defects in nerves, it may be well to call attention to the statement of Bowlby[7] that the function of some nerves in the same individual is restored more readily than that of others. He says better results are obtained after suture of the peroneal or the musculo-spiral nerve than after suturing either the median or the ulnar. If this be true it would not be accurate to compare results following one method of operating on the musculo-spiral, for instance, with a different method employed on the median, as the same operation that succeeded in the nerve whose function was easily restored might fail in a nerve more difficult of repair.

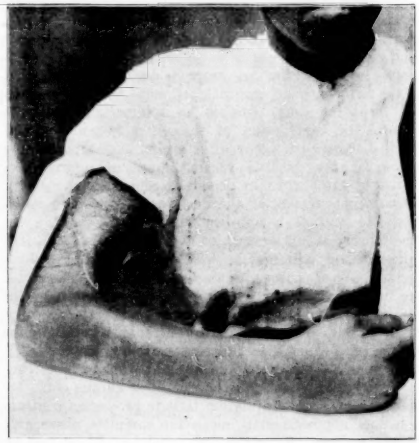


Fig. 1.—Taken January, 1905, about two weeks after the second operation and fourteen months after the first. This photograph shows the scar over the musculo-spiral and the hand flexed as far as possible at that time.

The surgical methods of repairing nerve defects may be classed as follows: 1. Simple suture. 2. Flap operation. 3. Nerve bridging. 4. Nerve implantation or anastomosis.

1. Simple Suture.—Under the head of suture are included not only those cases in which the ordinary technic of freshening the ends of the nerve and approximating them with fine sutures into the nerve substance and into the sheath is employed, but also cases in which other procedures are necessary to facilitate this approximation. Resection of a portion of the long bone has been done when it was found impossible to coapt the nerve ends in any other manner. Dr. C. A. Powers[8] has collected from the literature seven such cases, two of these operations being performed by Keen. Surrounding the site of the nerve suture by some kind of tube—tubulization—is advocated by a few writers and has been employed by Guelliot and by C. Foramiti. Foramiti[9] uses the artery of a calf for this purpose. It may be employed fresh when it is taken aseptically from the calf and immediately used after rinsing in salt solution, or the artery may be boiled and then hardened in a formalin solution. It is claimed that such a procedure prevents adhesion of the nerve to surrounding tissue, and at the same time affords a direct path for the nerve fibers. Aside from the difficulty of securing a proper tube, the greater danger of suppuration following its introduction and the interference with the nutrition of the nerve are serious objections.

2. Flap Operation.—Flap operations consist of splitting from one or both ends of the nerve sufficiently long flaps to bridge the defect and suturing them together. There are a few successful cases reported, though this method is not popular, as too much healthy nerve tissue is sacrificed in making the flaps. Most of these operations have failed.

3. Nerve Bridging.—The term "nerve bridging" may be applied to that class of operations in which some foreign substance is used to bridge the defect between the two ends of a divided nerve. Dr. Powers, in a most interesting article,[10] reports a case in which he filled the defect in the external popliteal nerve of a man by transplanting four inches of the sciatic of a dog. The nerve was taken from the dog and immediately transplanted. The wound healed primarily, and 45 days later all forms of sensation were reported normal, but the muscles supplied by this nerve would not react to the strongest faradic current. Eight years after the operation, sensation over the region normally supplied by the peroneal had practically disappeared and the muscles remained entirely paralyzed. Powers has collected from the literature 21 cases in which nerve tissue from a lower

Fig. 2.—Taken January, 1905, about two weeks after the second operation and fourteen months after the first. Note the dull and crumpled appearance of the nails of the index and middle fingers as compared with the other nails; also the enlarged and glossy appearance of the distal joint and the last two phalanges of both of these fingers.

6. Wien. klin. Woch., 1891.
7. Lancet, July 26, 1902.
8. Annals of Surgery, vol. xl, p. 642.
9. Archiv. f. klin. Chir., vol. lxxiii, No. 3.
10. Annals of Surgery, vol. xl, p. 632.

animal was used to correct defects in a human nerve, and of these cases only 21 per cent. may be said to have terminated in a satisfactory way. He concludes that nerve bridging or transplanting should be discarded.

The nerve tissue transplanted from lower animals in all probability has no intrinsic value in repairing defects in human nerves, but merely serves as an organized tissue would under similar conditions in providing a path for the growing nerve fibers to follow, so protecting them from the surrounding tissues. The suture *à distance*, where several strands of catgut connect the ends of a nerve, involves exactly the same process and should be included under this head.

4. Nerve Implantation or Anastomosis.—The term "nerve implantation" may be applied to operations in which the peripheral and the central portion of an injured nerve are implanted into a neighboring healthy nerve, or in which the peripheral end only is so implanted. While nerve implantation has not been performed so frequently as nerve bridging, the results have been more encouraging, the proportion of successes being about 50 per cent. I do not include those operations for correction of deformities following such diseases as infantile paralysis, where the lesion is in the spinal cord and the nerve fibers are secondarily involved through their whole extent, but merely those cases where there has been some local injury to a peripheral nerve. Be-

Fig. 3.—Taken Nov. 16, 1905, about ten months after the second operation and two years after the first. Nails of index and middle fingers are short from loss of substance at tips of these fingers from previous ulceration, but are smooth and of normal color. Size and appearance of distal joints and phalanges of these fingers are about normal.

sides the clinical evidence, a number of experiments have demonstrated the feasibility of such an operation as implantation. In an experiment by Spitzy,[11] the peroneal nerve was grafted onto the tibial. The clinical results were good, and microscopic examination of the site of the grafting plainly showed the passage of fibers from the tibial nerve into the implanted distal portion of the peroneal. As between the last two methods of correcting defects in nerves (that is, nerve bridging and nerve implantation), a study of the literature on this subject, both from an experimental and a clinical standpoint, seems to show the superiority of nerve implantation.

The following case of nerve implantation may be of interest both from a surgical and an anatomic standpoint:

Patient.—H. J., aged 21 years, was kindly referred to me by Dr. George Ben Johnston. He was a large, muscular negro, whose previous health had been good. Family history was of no significance.

History.—In August, 1903, he was thrown some distance by the explosion of a boiler. There was a fracture of the leg, a scalp wound and a severe trauma to the soft parts of the upper right arm. The bone was not fractured, nor was the shoulder dislocated, and the skin was only broken at a small place on the outer side of the arm. He was unconscious for several hours, but on recovering consciousness found his right hand and forearm paralyzed.

Examination.—Nov. 17, 1903, he came under my care. His other injuries were nearly well, but so far as could be made out complete paralysis of both sensation and motion existed in all of the forearm and hand except in those muscles supplied by the ulnar nerve and that portion of the skin supplied by the ulnar and the musculo-cutaneous nerves. In the upper arm the action of the triceps was unimpaired, but flexion was weak. Besides marked atrophy no trophic disturbances were present.

Operation.—An incision was made over the upper part of the

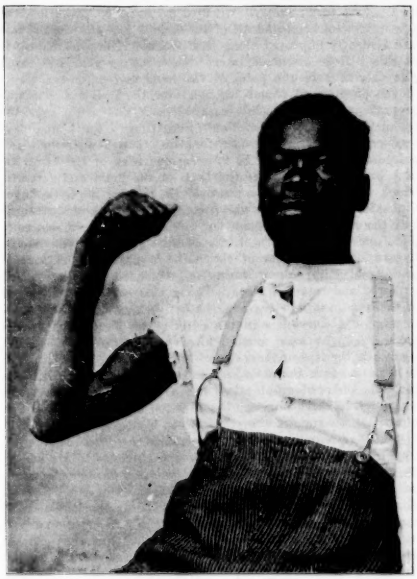


Fig. 4.—Taken Nov. 10, 1905, about ten months after the second operation and two years after the first. Note good flexion of fingers and hand; also slight keloid development at scar over the median at the last operation. Just above this is part of the scar of the first operation.

course of the median nerve. The upper brachial artery was obliterated and no trace of the median nerve could be found. In the place of the nerve and artery was an indistinguishable fibrous mass. The ulnar nerve was normal. After extending the incision down to the middle of the arm the median nerve was found. It was in fairly good condition here, but the line of demarcation between healthy nerve tissue and an absolute fibrous cord was quite sharp and distinct. The median from its origin for a distance of two and one-half inches had been completely crushed and its sheath, with the remains of the brachial artery, formed a fibrous mass, in which no trace of nerve tissue could be found. It was impossible to stretch the nerve or to form a flap to bridge such a defect, so implantation into the ulnar was done. The median was cut almost across half an inch below the point where it first appeared healthy and the peripheral end sutured into a nick in the ulnar. A fine needle and fine chromic catgut were used, one suture being put into

11. Amer. Jour. of Orthopedic Surgery, August, 1904.

the nerve substance and several into the sheaths of the ulnar and median. Care was taken not to tie the sutures too tightly. The median was not cut entirely across, a few fibers and the outer part of the sheath being left, as they served to hold the nerve to the fibrous mass just above it and thus relieved some of the tension on the sutures. From the fact that the triceps was unimpaired, the injury to the musculo-spiral must have been lower down, so no attempt was made to find it and the wound was closed. Union was by first intention. The patient left the hospital two weeks after the operation. He reported later that improvement in motion and sensation began within a month after the operation. As he was not very intelligent it was difficult to get an accurate account of the progress of improvement, but it was evidently quite rapid after this time.

Further History.—On Jan. 15, 1905, he returned to the hospital. Flexion of all the fingers was present, though much stronger in the little and ring fingers than in the others. The thumb could be flexed or adducted as a whole, but chiefly from the carpo-metacarpal joint. The last phalanx could be flexed on the first very slightly. Much to my surprise, extension was present in the hand and all of the fingers and the thumb, and had evidently improved along with flexion. The probable cause of this will be discussed later. Sensation to pain and touch was present over the palm of the hand and palmar surfaces of the fingers and thumb, though over the ulnar side it was prompt and normal, while retarded and less acute over the region supplied by the median. Sensation to touch and pain was present over the whole forearm, though somewhat impaired over the back of the forearm and back of the hand, except to the ulnar side of the back of the hand and forearm, which was normal. Sensation over the back of the little finger was satisfactory and was also present on the back of the thumb and the ring finger, though not so marked. There was complete anesthesia over the backs of both the index and middle fingers from the roots of the nails to near the metacarpophalangeal joint, where it gradually blended into very much impaired and retarded sensation over this portion of the back of the hand. One of the remarkable features was the presence of trophic disturbances in the nails of the index and middle fingers. About four months after the operation ulcers appeared on the tips of these fingers and refused to heal entirely; at the same time the nails became crumpled. This condition is shown in the photograph taken January, 1905. There had been no injury to these fingers. No affection of this character was present at the time of the operation in November, 1903.

Second Operation.—A second operation was done on Jan. 17, 1905. Both operations were performed at my clinic at the Memorial Hospital, Dr. H. H. Levy, emeritus professor of medicine in the Medical College of Virginia, and Dr. J. W. Southal being present, in addition to the students, at the last one. A short incision just above the elbow exposed the median nerve, which appeared normal. The musculo-spiral was then exposed to the outer side of the elbow, where it lies between the brachialis anticus and supinator longus. It was small and yellow and presented distinct evidences of marked degeneration. This nerve was followed up the arm for three inches, where it was cut across and a fine silk suture inserted. With a closed hemostatic forceps an opening was burrowed beneath the biceps from the lower angle of the incision exposing the median to the lower angle of the incision over the musculo-spiral. The forceps then seized the suture previously placed in the musculo-spiral and so drew this nerve to the median. A slight nick was made in the median and the musculo-spiral was implanted with fine sutures of chromic catgut in the same manner as the median had been implanted previously. The wounds healed by first intention. The operation did not interfere with the motion of the hand or fingers, with the exception of apparently somewhat lessening the flexion of the thumb, which may have been caused by the slight nick in the median.

Postoperative History.—On Nov. 16, 1905, the patient reported for examination. He was greatly improved in every respect. The trophic disturbance of the index and middle fingers had disappeared and the nails have straightened, as shown in the photograph, though from loss of substance at the tips of the fingers these nails will always be shorter and more irregular than they would be normally.

The following report was kindly made for me by Dr. M. Call, adjunct professor of medicine in the Medical College of Virginia, and is the result of his examination of this patient Nov. 16 and 17, 1905:

"Extension of forearm good. Flexion of forearm excellent, with slight degree of pronation. With forearm extended, pronation and supination are good. Flexion and extension of wrist are both present, extension being the stronger, but both are of good force.

"Phalanges.—Flexion of little and ring fingers good, of middle finger less strong. Index finger has less strength than the middle, but all these fingers flex with considerable strength. All the phalanges flex except the first phalanx of the index finger, which has scarcely perceptible motion. Extension of all the phalanges occurs, that of the middle and index fingers being weaker than that of the little and ring.

"Thumb.—Slight flexion of terminal phalanx, less marked flexion in the first phalanx. Extension present in terminal phalanx, less marked in first phalanx. Abduction and adduction both present to slight extent. Very little backward movement. Rotation can not be accomplished. With the hand at rest the thumb is slightly adducted.

"Nerves.—Galvanic stimulation of nerves gives the following result: Ulnar, below the point of implantation, gives marked contraction. Stimulation of the median gives marked contraction, but weaker than results from stimulation of the ulnar, especially weak in the thumb muscles supplied by the median. Musculo-spiral could not be located at the radial point, though the corresponding nerve on the uninjured side showed marked contraction. Stimulation of area just over the region of posterior interosseous nerve gives marked response in muscles supplied by that nerve, though the contraction of some of these muscles was due to unavoidable direct stimulation of the muscles themselves.

"Stimulation of the ulnar nerve above the implantation of the median gave ulnar and median response, the ulnar group being markedly stronger.

"No anesthesia or paresthesia. Partial cutaneous analgesia was marked on dorsal surface of middle finger and on plantar surfaces of index and middle fingers. There is marked atrophy in the muscles of right arm, forearm and hand, as compared with the well-developed muscular left side.

"The nails on the index and middle fingers show evidence of past trophic disturbances."

CONCLUDING REMARKS.

There are two features of this case that call for particular attention.

1. The first is an anomalous nerve supply to the extensors of the forearm. They were completely paralyzed at the time of operation, but, as the triceps was normal, the injury to the musculo-spiral must have been lower down in the arm, and it was thought unwise to attempt any operation on it till the median had been repaired. However, after repair of the median the extensors improved along with the flexors. The second operation showed the musculo-spiral degenerated to a marked degree, and, after complete section, motion of the extensors was not interfered with; so this improvement of the extensors could only be accounted for in two ways: (1) There may have been a high bifurcation of the musculo-spiral, the radial following the normal route of the musculo-spiral, the posterior interosseous, which may have been only temporarily injured, taking some other course. (2) The posterior interosseous may have been given off from, or at least have freely communicated with, the anterior interosseous of the median.

I stated the case by letter to Dr. George A. Piersol, professor of anatomy in the University of Pennsylvania, who replied as follows:

"By your first operation we may assume that the median was regenerated. Now in some reported cases the anterior in-

terosseous of the median had communications with the posterior interosseous of the musculo-spiral. Supposing that such paths were present, might not their existence have guided an unusual number of regenerating fibers to the extensors under the stress of needed additional supply, since the usual source (the musculo-spiral) was defective?

Dr. C. M. Miller, professor of anatomy in the Medical College of Virginia, agrees fully with Dr. Piersol in this solution of the case.

2. The second point of special interest is the trophic disturbance on the backs and tips of the index and the middle fingers. It is claimed by many anatomists that the tip of the index finger and the back of its last phalanx, together with the tip and back of the last and a portion of the second phalanx of the middle finger, are supplied by the median and not by the radial; though even these anatomists admit that there is free communication between the radial and median in this region. It must also be recalled that the root of the nail extends half way between its apparent base and the last phalangeal joint. Trophic disturbances in this area would unquestionably affect the nail profoundly, and the supply of the radial could very readily reach this region from a normally distributed nerve. But, in this case, with such an evidently anomalous nerve supply of the forearm and hand, it is likely that the radial went as far as the tip of the index and middle fingers. The fact that the posterior interosseous probably derived most of its nerve fibers from the median would tend to show that practically all of the fibers from the musculo-spiral went into the radial nerve, which would then be larger than usual, and consequently would be likely to be more widely distributed than is usually the case. The branches of the ulnar can easily account for the undisturbed condition of the ring finger and those of the musculo-cutaneous for the healthy appearance of the thumb. If the trophic disturbance of the index and middle fingers had been due to the median nerve, the thumb would have been affected. Mr. Hilton, in his classical work,[12] records the case of a sailor in whom the pressure of callus on the median nerve produced ulceration of the index and middle fingers and of the thumb. All of the ulcers healed promptly when pressure on the median was relieved. As has been mentioned above, complete mechanical destruction of a nerve unaccompanied by irritating conditions should not produce any trophic disturbance beyond simply atrophy. Such was the case with the median nerve. The radial, on the contrary, had undergone marked degeneration and the musculo-spiral had evidently received sufficient injury to cause total suspension of the function of the radial for some months, with the probability that without implantation its function would never have been satisfactorily restored. The lesion was probably of such a character that after several months just enough of its function returned to promote the trophic changes mentioned. That the radial nerve at the time of the second operation was incapable of conducting impulses to any marked degree was shown by the absence of appreciable change in the area of anesthesia over the backs of the index and middle fingers following the section of the musculo-spiral nerve. The disappearance of the trophic symptoms a few months after the musculo-spiral was implanted into the median also tends to show that they were due to the radial nerve.

303 West Grace Street.

12. Hilton: Rest and Pain, p. 195.

DRUG ADDICTIONS.

PRELIMINARY REPORT OF THE COMMITTEE IN SECTION ON NERVOUS AND MENTAL DISEASES.*

SMITH ELY JELLIFFE, M.D., PH.D.
Chairman of the Committee.
NEW YORK.

At the last regular meeting of this Section of the American Medical Association a discussion was held on the subject of drug addictions, one of the results of which was the appointment of a committee to formulate some plan for the outlining of a system of procedure which would lead to some definite knowledge of the subject. Accordingly a committee was formed of Drs. Smith Ely Jelliffe, New York, chairman; Brooks F. Beebe, Cincinnati, and Albert E. Sterne, Indianapolis. Inasmuch as the different members of this committee are distributed pretty widely over the United States, it has been impossible for them to get together. Therefore, the following syllabus of the report should be considered more as a report of progress from your chairman than as a complete report of the committee as a whole.

The committee feels that the scope implied by the words "drug addictions" is too extensive for consideration at this time, inasmuch as it would include the enormous subject embraced by the modern study of alcohol, opium, hasheesh, coca and other drugs, all of which are widely used to the detriment of the individual and social body. They have, therefore, thought best to limit their labors for the present to the subject of opium.

Inasmuch as the matter of terminology was brought up at the last meeting, we felt that our ideas on the subject might not come amiss. Almost an hour was devoted to the discussion of just what term should be used, and your committee feels that such time is spent to little advantage. It matters little whether one speaks of the opium habit, the opium disease or the opium addiction.

Your committee feels that the only service it can render to this Section at this time is to formulate, if possible, a series of suggestions concerning lines of fruitful inquiry. There are a large number of problems that must be solved, so great a number, indeed, that it would be futile at this time to suggest them all. We have, therefore, limited ourselves to some that seem to us most prominent at the present time, and as such they are offered to this Section, in the hope that some of the members who may hear or read this report may do some work through the year along the lines indicated and give the results of the inquiry at the next session.

1. The first problem concerns the *distribution and spread* of the habit. It is well known to many how universal the use of opium is in some of its various forms. Many of us are conversant with the fact that in small rural communities enormous numbers of the population are addicted to the use of the drug. Were it not for the enormous sale of official preparations of opium many drug stores would hardly exist. Therefore, it becomes important to determine more accurately just how widespread this practice is. At the present time we have no competent method outlined by which we may arrive at the information desired. Grinnell's studies in Vermont were, perhaps, most far-reaching and satisfactory, but these are open to many misinterpretations. Still we feel that perhaps the best way of getting at this matter would be through the pharmacists of a state or community. Also it might be suggested that prison statistics might be of service. There are many members here who are attending physicians to some of the large state institutions where an enormous number of opium habitués are known to be confined, for opium taking among the criminal classes is known to be almost universal.

A member of your committee has had under consideration for some time a study of the cures advertised in the daily press, and we feel that this also offers a suggestion whereby information as to this matter of frequency might be obtained.

* Read in the Section on Nervous and Mental Diseases of the American Medical Association, at the Fifty-sixth Annual Session, July, 1905.

2. The second problem concerns rather the proportionate number of individuals who take the drug by mouth, by hypodermic use, or by other *methods*, as smoking, etc.

3. The third problem is concerned with *etiology*. In other words, what are the origins of the habit, what induces people to take it up? It is well known that pain is an extensively potent cause. If so, what is the proportion of those that are induced to take up the habit by continued pain, and how may that be avoided by more carefully impressing on the medical fraternity the dangers of the use of opium as an analgesic? What is the influence of environment on the development of this habit. We have already spoken of the criminal class as particularly prone to this addiction. What are the factors which render it easy of access to this closely knit community?

4. From the individual etiology apart from the social, the psychologic study of *euphoria* might be taken up to advantage. Notwithstanding the classical controversy of De Quincey and Coleridge, we are far from the modern conception of the elements that constitute the euphoria of opium, and close analysis of the psychic mechanism under the influence of this drug from the standpoint of modern psychologic methods is very much needed.

5. The *pharmacology* of opium is in need of further investigation. The molecular formulas for morphin and its related bodies are in need of more definite analysis, that we may know just what base is responsible for the activities of the drug. The modifications known to exist in the activities of methylmorphin, dimethylmorphin, etc., offer the suggestion that the chemical study is not without its possible revelations.

6. Naturally the topic that interests us most concerns itself with the *treatment*. This should be considered from the *social* point of view as well as that of the *individual*, for in the very factor for which environment is responsible for the spread of the habit, legal or other regulations may be satisfactorily brought out that might reduce in part this important etiologic factor. Your committee does not anticipate in this study of social prophylaxis a topic that they believe can be handled by any one worker, for in its unraveling one must go to the very mainsprings of human corruption. Graft, protection money, debauchery, are the faggots that boil the pot of this modern witches' brew.

From the personal therapy side, however, your committee feels that the study of the *abstinence symptoms* is of intense importance. Concerning them there seems to be more misinformation than definite information in our standard text-books. The cause of the abstinence symptoms must be capable of understanding from the point of view of abnormal physiology, and this study can certainly afford very fruitful results. Closely bound up with the phenomenon of *tolerance*, of which everyone who has seen these patients is fully aware, is that of the possibility of the question of immunity. Are there antibodies formed which permit of this tolerance to the drug which is so well known, or does the body take on increased oxidative powers, permitting it to break up more alkaloids with this increased use?

These two topics, both carefully studied by Faust and left undetermined, are probably capable of solution, and your committee offers them as some of the matter fruitful for the future.

Trusting that the report herewith submitted may be of some service, in the sense that some of the members of the Section may be led to engage themselves in the investigation of some of the topics suggested, your committee rests with thanks.

64 West Fifty-sixth Street.

Encouragement One-third the Business of the Physician.—Dr. Richard C. Cabot of Boston, in describing the impotency of the physician to affect through his technical skill or knowledge much that he would like to do, said: "Encouragement is one-third the business of the physician, but if it is to be permanent and not a mental cocktail, we must give the patient good reason for being encouraged, which usually means religion or its equivalent. It is the disregard of these facts that has sent so many patients away from physicians and into the hands of Christian scientists and mental healers."

ACUTE ARTICULAR RHEUMATISM.*

C. W. HARGENS, M.D.
HOT SPRINGS, S. D.

This paper does not assume the pretension of being a complete discussion of this disease, and only a few of the most important points in the general discussion, diagnosis, differential diagnosis, etiology and treatment, are discussed. The statements here made are the result of a large clinical experience extending over a period of fourteen years' residence at Hot Springs, S. D., and in treating cases of acute articular rheumatism with the assistance of modern hydriatic procedure, latterly in an institution thoroughly under control, employing an alkaline thermal mineral water, and aided by climatologic and topographic conditions, embracing an altitude of 3,400 feet, an excessively dry, sunshiny climate, free from great sudden atmospheric change, some of which factors possibly operate in giving me an experience and ideas different from that of practitioners not so located.

Acute articular rheumatism is an acute febrile affection, non-contagious, characterized by a nomadic multiple arthritis, profuse sweating and prone to endocardial complications.

The term "rheumatism" is an omnibus into which many practitioners dump all ill-defined pains, conditions and states troublesome and not well understood, a sort of refuse heap to which the salicylates are applied without beneficial results, and wherefor the treatment of acute articular rheumatism and rheumatism in general falls into disrepute. Even that classical difficulty, acute arthritis deformans, seldom recognized as such, is almost always diagnosed as acute articular rheumatism and treated as rheumatism, not only without influence on the progress of the disease, but with detriment to the patient. Out of the many cases of arthritic deformans that I have seen I have never been able to elicit from the patient the statement that his case was diagnosed as such in its acute stages, but he has uniformly stated that his attending physician had pronounced it rheumatism. Also, I find that his physician continues to diagnose as chronic rheumatism nearly all cases of chronic arthritis deformans. For me to delve into the many arthritic conditions to which the term rheumatism is erroneously applied is beyond the scope of this paper. Acute articular rheumatism may be speedily recovered from and almost never becomes chronic. These so-called cases of chronic rheumatism are seldom true rheumatic arthritis, but are usually gout, arthritis deformans, articular disturbances due to pathologic states of the nervous system or to some form of coccus infection.

I wish to eliminate from the discussion all nonarticular affections and all multiple articular affections, distinctly due to the various forms of coccus infections, and to make a plea for the elimination of the term "rheumatism" as coupled with that of a specific coccus infection. The elimination of such terms as "rheumatoid arthritis" and "gonorrheal rheumatism" will be a long step along the line of proper diagnosis and treatment. There is as much sense in pronouncing a case one of tubercular rheumatism of the hip joint as in pronouncing a case gonorrheal rheumatism of the knee joint. The idea that heat, pain, swelling, tenderness, redness and stiffness in or about a joint is necessarily rheumatism or rheumatic is responsible for many sins of omission and commission.

* Read before the South Dakota State Medical Society at Deadwood, 1905.

I have never seen a case of mon-articular arthritis that I could safely pronounce rheumatism.

Acute articular rheumatism has the characteristic of being a multiple arthritis and of ambulating from joint to joint, with improvement in the joints previously involved. This is not true of coccus infections and of arthritic conditions due to pathologic states of the nervous system, to which the latter class, arthritic deformans, probably belongs.

Whenever you have a case where one, two or three joints are involved, and these joints only, and persistently so, you have not a case of acute articular rheumatism. The scope of this paper does not admit of going into a detailed account of the differential diagnosis between acute articular rheumatism and other articular affections. However, acute arthritis deformans is so often confounded with rheumatism that I will mention a few of the cardinal points of difference.

The onset in both diseases is sudden and similar. After a day or two in acute arthritis deformans there will be a temperature not high and not in proportion to the amount of arthritis present; that the joints are swollen, but not red and not so hot; that in arthritis deformans the swelling is more in the peri-articular structures; that the pain is less severe and that the joints can be moved without that excruciating pain found in acute articular rheumatism; that the patient can bear the weight of the bed clothes; that while polyarthritis is present in both diseases in acute arthritis deformans it is not shifting; that the joints involved are persistently involved; that the arthritis, if involving the fingers, gives a fusiform shape to the joints; that the cervical and maxillary joints are often involved; that there is not the tendency to endocardial complications; that salicylates do not influence the progress of the case, and that the case tends to become chronic and later to develop all the pathologic states characteristic of chronic arthritis deformans.

As to the etiology of acute articular rheumatism, that at the present time is a much debated question. Is or is it not a specific microbic infection, or is it microbic and not specific? Dr. McCrae, of Johns Hopkins, in an analysis of 270 cases of acute articular rheumatism, states that the cultural results were "practically negative," not only that, but of "negative value especially in reference to the absence of streptococci and staphylococci from the cultures." Recently the bacterial phase of the etiology has been summed up in an editorial in the Feb. 4, 1905, number of THE JOURNAL of the American Medical Association as follows: "Cole, of Baltimore, and Jachmann, of Breslau, among others, have failed to find the micrococcus of rheumatism or any other microbe in the blood or in the joints of typical cases of acute articular rheumatism." A fact which should excite suspicion in the mind of the student as to the bacterial etiology is that the varieties of microbes claimed to be isolated and specific are about as numerous as the claimants, and the fact that the various forms of micrococci will produce arthritis and endocarditis.

Clinical experience has demonstrated to me the marked difference in which cases of acute rheumatism yield to the treatment subsequently to be outlined, and has suggested the possibility of the dissimilarity of the operating cause or causes in two apparently similar cases. The behavior of the majority of cases under treatment has suggested an autotoxic cause, as I have seen case after case that had run anywhere from a few days to six weeks, under what I term improper treatment, make a recovery so rapid as to border on the marvelous; cases in which the rapid recovery apparently could be explained only on the hypothesis of limiting and preventing the formation of autotoxic causal agents and eliminating the products of abnormal metabolism; cases in which, if the causal agent is microbic, then sodium salicylate must be a specific, for we know of no microbe destroyed by starvation diet, or the withdrawal of certain classes of food, or by profuse elimination. On the other hand, I have seen cases, apparently typical but presenting various complications, among them cardial involvement, angina or a history of angina, which, under the treatment, would improve up to a certain point and beyond which I failed to obtain the markedly rapid expected improvement, on the hypothesis of simply eliminating products of suboxidation; cases in which the treatment had to be modified and carried along lines based on the idea that I had a mild infection to deal with; cases in which sodium salicylate, on the basis of being a specific, influenced the case up to a certain point and there had to be employed cautiously or abandoned. It has seemed to me that children are most prone to cardiac involvement, and in a number of instances I have found them suffering from considerable cardiac disturbances following repeated attacks of angina, prior to the development of marked arthritic disturbances. There does not seem to be any doubt about the microbic agent in these cases. The remarkable effects of profuse elimination, of a rigid, limited, non-animal, non-vegetable alkaloid, non-toxin-forming diet is a weighty argument against the infectious origin of this disease, and one greatly in favor of the autointoxication theory.

Most of my patients suffering from acute articular rheumatism come from the active walks of life—growing children with lusty appetites to supply the needs of rapid growth, in whom we see digestive disturbances due to overeating and violent play; servants, laborers, freight conductors, cabmen, teamsters; individuals doing work that calls for active exertion, great physical energy; individuals subject to becoming overheated and then suddenly becoming chilled, individuals doing a work wherein they are subject to exposure and sudden atmospheric changes—wet and cold. These conditions and factors seem to produce some variety of digestive disturbances leading to the formation of toxins in the alimentary canal, the absorption of these resulting in metabolic disturbances, and producing products of suboxidation and all the manifestations found in this disease, just as you have similar manifestations, only on a smaller scale, in gout. The relation between dietary indiscretion, digestive disturbances and the operation of resulting autotoxic agents in gout are facts beyond cavil; why not acute articular rheumatism, both are arthritic, the one involves a few joints, the other many, with numerous similar manifestations, differing in degree only, and both amenable to somewhat similar lines of procedure?

Now the weakened and altered state of the tissues as the result of the operation of the toxic agents and disturbed tissue metabolism leads to a reduction of the vital resistance and your patient is subject to secondary microbic invasion. This, I hold, is what occurs in many of the cases and we have as a result infection complicating the results of autointoxication, with resulting cardiac involvement. These are the cases to which the treatment subsequently to be outlined is applicable in part only and must be modified to cover the infective element. In view of these clinical observations, I have come to make the statement that acute articular rheuma-

tism is a disease that is first, and in the great majority of cases, autotoxic, and that the autotoxic agent is probably some form of suboxidation due to toxic invasion from the alimentary canal, just as gout is produced by toxic invasion from the alimentary canal; secondly, that acute articular rheumatism is often complicated by microbic invasion, but that the infection is secondary to the conditions wrought by the disturbed metabolism and made possible by them. Recognizing this theory, early proper treatment will promptly relieve the case and in almost all cases the secondary infection can be prevented, and thus the more dangerous complications be prevented or greatly modified.

TREATMENT.

There can be no jugglery in the treatment of this disease; the least digression from a few of the points mentioned means disaster; skepticism as to the existence of a successful treatment of acute articular rheumatism and the prevention of its complications is based on errors of diagnosis. By eliminating these errors of diagnosis and rigidly carrying out the treatment indicated, one will be eminently successful. Cases complicated by cardiac involvement are cases complicated by infection and one must recognize this element in treatment. I realize that in the treatment on which I insist there is one element very difficult to obtain, especially for those engaged in country practice. I refer to the bath tub. Without the tub there will be more or less failure. To a certain extent this can be overcome by some improvised hot-air apparatus.

I have been profoundly impressed by the importance of two elements in the treatment—first, the prime necessity of limiting the quantity of food taken and the withdrawal of all proteid or xanthin-forming foods, and, secondly, with the prime importance of the care of the skin and profuse elmination from all the emunctories.

First.—Place the patient in bed between dry woollen blankets, wearing a light night gown, with open sleeves fastened with safety pins. Keep the bed clothes dry at all times and never cold and clammy; give him absolute rest and plenty of dry, warm air in a sunshiny room.

Second.—Withdraw all food until the alimentary canal has been thoroughly emptied and cleansed; then for the first few days employ a strictly skim milk diet; then begin to allow stale bread and milk products. If milk is not well taken, cereal foods and buttermilk may be used. The carbonated waters often assist the difficulty in taking milk. Exclude all tea, coffee, cocoa and chocolate in the acute stages. When the patient has passed the acute stages he may gradually begin the use of fish, oysters, cottage cheese and the white meat of barnyard fowls, carefully returning to the proteid articles of diet and immediately abandoning them on a reappearance of the arthritic symptoms. Easily digested green vegetables, such as new peas, string beans, lettuce, asparagus, spinach and a small quantity of baked and mashed potatoes are allowed. Exclude all acid and sweet fruits. Oranges are freely allowed. It will be well to keep watch of excessive amounts of starchy foods and heavy sweets.

Third.—Give a vigorous dose of calomel, follow this with epsom or rochelle salts, and thereafter keep the bowels moving from two to four times each twenty-four hours with the salts or some other agreeable form of saline laxative. I am partial to the magnesium sulphate.

Fourth.—Give tub baths. Place the patient in water at 98 degrees; after he has been in the tub five minutes, add hot water gradually to bring the temperature to 100 or 102 degrees. Keep patient in the bath fifteen to twenty-five minutes, as he will bear, guarding against sensation of faintness or marked depression. Give patient skin friction, massage and passive movements entire time he is in the bath, in the order named. In removing patient from the bath be careful not to expose the skin to the air, quickly throw a dry, warm sheet and blanket around him, and get him into bed between dry, warm blankets. Now pack hot bottles about him and gradually bring on free perspiration, keeping this up from three-quarters to an hour and a half.

Fifth.—Now begin to give ten to fifteen grains of sodium salicylate with a glass of alkaline mineral water every two hours. Half a glass of milk may be given with a little seltzer water in place of the full glass of water if sodium salicylate causes great gastric disturbances. I seldom employ more than two drams of sodium salicylate in the twenty-four hours, and deem that dose sufficient for almost all cases. Under the treatment so far outlined one will be surprised at the size of the dose of sodium salicylate one can give without getting the customary toxic effects and gastric disturbances. Experience proves that patients taking hot baths with free elimination can take large doses of depressing drugs without the usual toxic effects, and it is very seldom that I am compelled to modify my dose of sodium salicylate. Now, as soon as the patient improves and gets comfortable, try to lengthen the interval between doses and continue the work along the line of reduction.

Sixth.—Flood the system by the internal administration of large quantities of an alkaline mineral water, giving it to him at regular stated intervals. If mineral water is not at hand, employ pure water, holding sodium bicarbonate or potassium citrate in solution. Keep the urine alkaline or neutral by the administration of alkaline mineral water.

Seventh.—Locally apply hot fomentations to the affected joints, or wrap in cotton batting or wool and apply a splint.

Eighth.—Unless the weather is warm, dry and free from sudden changes, keep the patient in bed for at least a week after the temperature has become normal. Caution him against exposure. It is astonishing how little exposure will bring on another attack within a week or ten days following an apparent recovery.

Now, this is an incomplete discussion of this disease and the scope of this paper does not admit of going into all the details and of discussing the changes in diet, treatment, etc., in the subacute and possibly chronic stages. Before closing, however, let me add the caution to get rid of the salicylate as soon as possible and to substitute the syrup of iodid of iron and Fowler's solution, as these patients become very weak and often markedly anemic. Also, one should not adhere forever to the nonproteid diet. The patient will do badly, recover slowly and poorly; so go back to a mixed and proteid diet as soon as possible, watching for a possible recurrence of the arthritic symptoms.

Peritoneal Adhesions.—Lejars calls renewed attention to those not infrequent cases where gastrointestinal symptoms followed some time after an apparently slight injury to the abdomen. These symptoms include rebellious colics, vomiting, constipation or diarrhea, without other evidences of organic disease. When the presence of adhesions simulates ulcer, gallstones, etc., operation with loosening of the adhesions is indicated.—*Denver Medical Times.*

SPINAL ANESTHESIA BY MAGNESIUM SULPHATE.

A REPORT OF SEVEN OPERATIONS PERFORMED UNDER ITS INFLUENCE.

H. A. HAUBOLD, M.D.
Attending Surgeon, Harlem Hospital.
AND
S. J. MELTZER, M.D.
Consulting Physician, Harlem Hospital.
NEW YORK.

EXPERIMENTS ON ANIMALS.

In several series of experiments on animals[1] it was established that magnesium salts have very distinct anesthetic properties. Among other things it was established that by local application of solutions of magnesium sulphate on nerve trunks the conductivity and excitability of motor and sensory nerves can be temporarily abolished; that by subcutaneous injection of certain quantities of magnesium salts general anesthesia with complete recovery could be produced in several species of animals, and, finally, that by intraspinal injections into animals of comparatively small doses of a solution of magnesium sulphate a complete anesthesia and paralysis of the posterior part of these animals could be produced.

These latter experiments interest us here particularly and we shall dwell on them a little longer. The experiments on dogs, cats and rabbits have demonstrated that by application of solutions of magnesium sulphate to the spinal cord, either through an opening made by laminectomy or through lumbar puncture, the sensibility and motor power of the posterior extremities became greatly impaired or were even completely abolished. The experiments on these animals, however, were not entirely satisfactory. In lumbar puncture in these animals the cord was sometimes unavoidably injured, which marred the results, and the injections through a laminectomy opening had the disadvantage that a part of the solution escaped again through the opening and that the quantities used could, therefore, not be measured exactly.

In monkeys, however, lumbar puncture can be carried out nearly with the same degree of safety and reliability as in human beings, and the experiments have here given uniform results. The injection of a solution of magnesium sulphate in a dose equal to about 0.06 (one grain) of the substance to one kilogram weight of the animal would cause, within a few minutes, complete paralysis, and anesthesia and paralysis would spread upward, reaching neck and head, and the animals would then lie in a state of stupor and paresis. The monkey, which an hour before was fighting and biting every one who came near him, would lie now perfectly limp, offering not the slightest resistance. The vital reflexes were not affected, heart beats were not changed; only the respirations were slightly slowed. The animal would remain in that state for many hours, but on the following morning would be found completely recovered. A few animals stood several consecutive injections at comparatively short intervals apparently without any after-effect. A dose four times as large as the one above mentioned proved fatal to the animal.

From the experiments with intravenous injections the observation should be mentioned here that solutions of magnesium sulphate are very toxic, even in small doses, especially when injected at a rapid rate. The toxic effects, however, are essentially confined to the function of respiration; heart and blood pressure, if the dose employed was not too large, remain practically unaffected. In animal experimentation, therefore, an intoxication with magnesium salts does not necessarily lead to a fatal issue; on the contrary, the most stubborn respiratory paralysis has been successfully overcome by patiently and perseveringly carrying out proper artificial respiration, i. e., insufflations of air into the trachea by the methods commonly employed in physiologic laboratories.

SPINAL ANESTHESIA IN HUMAN SURGERY.

The question now arose: Could intraspinal injection be employed in human surgery? Spinal anesthesia seems to be now a well-established method. Its history is of very recent date. It began with the lumbar injection of cocain.[2] Influenced apparently by the International Medical Congress in Paris (1900) and by the enthusiasm displayed by Tuffier for the method and the drug, spinal cocainization soon began to be employed abroad and in this country extensively. This widespread activity, however, was soon followed by a reaction against the method. Bier himself was one of the first to warn against its indiscriminate use. Cocain proved to be poisonous even in very small doses. (It is a noteworthy fact that spinal cocainization was not tested in experiments on animals before its employment in human surgery.) Eucain did not give better results.

Recently, however, the pendulum began again to swing in favor of spinal anesthesia. Stimulated by the observations of H Braun on local anesthesia, Bier and others found that the addition of suprarenal extract makes cocain more available also for spinal anesthesia. Furthermore, in stovain, a new synthetic product of the cocain group, a drug was introduced which is somewhat less effective, but it seems to be also less poisonous than cocain. Judging from the number of favorable reports which we now find in the surgical literature on long series of operations carried out under spinal anesthesia by one or the other method, the conclusion seems to be justified that spinal anesthesia as a method has now come to stay.

USE OF MAGNESIUM SALTS.

Could magnesium salts also be employed by this method in human surgery? We felt convinced that an attempt to test it was thoroughly justified for the following reasons: As stated above, in animals standing nearest the human species, in monkeys, spinal anesthesia by magnesium salts has given complete satisfaction; there was complete anesthesia of the posterior part of the animal, which was followed by complete recovery, and the experiments have shown that even repeated anesthetization of the animal by this method left no after-effects. Also, the dose which was amply sufficient to produce complete anesthesia was only about one-fourth of the fatal dose—a latitude between the anesthetic and the fatal dose much greater than in most of the other anesthetics. Moreover, the danger which might come from the administration of magnesium salts was not through failure of heart or blood pressure, but only through impairment of the respiratory function, a danger which is amenable to relief by artificial respiration efficiently carried out. The fact that magnesium is not

1. The experiments were carried out at the Rockefeller Institute for Medical Research by Drs. S. J. Meltzer and John Auer: Amer. Jour. of Physiol., vols. xiv and xv; also Amer. Medicine, Nov. 25, 1905. And S. J. Meltzer: Medical Record, Dec. 16, 1905.

2. L. Corning, 1894; A. Bier, 1898.

an alkaloid or an artificial synthetic product like cocain, etc., but a substance normally present in the body and an integral part of its living tissues does certainly not speak against its employment as an anesthetic.

It should also be stated that, differing from cocain, magnesium salts can be thoroughly sterilized by heat without affecting in the slightest their anesthetizing property. Finally, it should be remembered that, differing from the interests in favor of the employment of patented synthetic products, like stovain, alypin, etc., the attempt to employ magnesium salts in human ills was dictated by no other interest than desire to increase our store of knowledge and to benefit humanity.

Being thoroughly convinced of the justification of our undertaking, seven operations under the influence of spinal anesthesia by magnesium sulphate were performed in the Harlem Hospital during the surgical service of one of us (Haubold). In order to reduce any possible danger still more, it was decided to employ in human surgery, at least at first, a dose equal only to about one-third of that which proved to be harmless and efficient in animals, i. e., to inject by lumbar puncture a quantity of a solution of magnesium sulphate which would contain about 0.02 (1/3 gr.) to about one kilogram (about 2 pounds) body weight. Not expecting a complete anesthesia from such a small dose, we were ready to assist the effect by some degree of general anesthesia.

CASE REPORTS.

Herewith we give a brief account of the results:

CASE 1.—Mrs. M. M., aged 25, Sept. 4, 1905.

Operation.—Perineorrhaphy, including sphincter, and curettage.

At 3:15 p. m. a lumbar puncture was made and about 5 c.c. of spinal fluid permitted to escape. Five cubic centimeters of a sterile 25 per cent. solution of magnesium sulphate (equal to about 1 c.c. of the solution to 25 pounds of body weight) were injected. One hour later anesthesia of perineum was marked but insufficient. Chloroform was administered and operation was begun at 4:20 p. m. Operation was finished at 5 p. m. Only about 10 c.c. of chloroform were used; the anesthesia was complete. At the conclusion of the operation the condition of the patient was good.

No note of condition of patient was taken between 5 and 7 p. m. At 7 p. m. patient was completely unconscious and could not be aroused. There were no reflexes. Patient remained in this condition until 9 p. m., when she could be slightly aroused. There was no reaction to pain in lower half of the body. Incontinence of urine and feces. Temp. 99, pulse 80, resp. 18.

For the greater part of the night she remained in a semicomatose state. At 3:30 a. m. she flexed knees, and from 5 a. m. to 7:30 a. m. vomited small quantities four times. At 9 a. m. she was still drowsy, could move her legs, felt pain but could not localize properly. She had to be catheterized. Temp. 101.6, pulse 104, resp. 22.

Temperature and pulse returned to normal next day. Retention of urine, incontinence of feces and other symptoms disappeared in 24 hours. The patient then made an uninterrupted recovery and was discharged as completely cured on September 21. (Patient returned to the hospital on January 11 with an attack of appendicitis. She had no after-effects whatsoever from the intraspinal injection.)

CASE 2.—Mrs. R. S., September 27.

Operation.—Curettage for metrorrhagia.

At 3 p. m. a lumbar puncture was made; about 5 c.c. of spinal fluid were removed and 5 c.c. of a 25 per cent. solution of magnesium sulphate were injected. After 6 minutes there was a profuse perspiration and patient was fretful. After 12 minutes there was motor paralysis from the pelvis down; sensation was diminished, but insufficient for operation. At 3:25 chloroform was administered. The operation lasted 20 minutes. Five cubic centimeters of chloroform were used, and there was absolute relaxation of all muscles below waist line. Patient was unconscious, but conjunctival reflex was present.

At 4:15 p. m. patient was partially conscious and moved arms; lower extremities were paralyzed. At 6 p. m. patient was in profound narcosis; all reflexes were lost; there was faint response on tickling mucous membrane of the nose. At 2 a. m., September 28, patient talked incoherently; was still semicomatose. At 6 p. m. sensation returned in lower extremities. Motion did not return until 4 p. m., when for the first time also her speech became rational. From 11 p. m., September 27, to 5 p. m., September 28, patient vomited nearly every hour, this vomiting being only regurgitation, as the abdominal muscles were not used. At 1 p. m., September 28, patient's temperature rose abruptly to 105°, pulse was rapid, but respirations remained normal. Temperature gradually came down and in two days became normal. (The fever was apparently due to an intrauterine infection.) Retention of urine lasted about 36 hours. On October 1 patient felt well in every respect. There were no after-effects. After one week the patient was discharged, cured.

Remarks.—In both cases the amount of chloroform used was too little to have a prolonged after-effect. In both cases the deep general anesthesia did not set in until some time after the operation; in the second case the patient was out of the mild general anesthesia soon after the operation. The late deep general narcosis was apparently due to the magnesium sulphate alone, or to the magnesium sulphate plus the small amount of chloroform.

CASE 3.—Mrs. P. T., aged 22, September 29.

Operation.—Dilatation of cervix.

At 3:10 p. m. 5 c.c. of 25 per cent. solution of magnesium sulphate were injected by lumbar puncture. The weight of patient was over 150 pounds, hence the solution of magnesium sulphate was less than 1 c.c. to 30 pounds. There was profuse perspiration after 7 minutes. After 40 minutes there was no loss of sensation and no paralysis. Chloroform was administered and the operation performed. About 4 c.c. of chloroform were used; there was no general anesthesia, but no pain was felt and no resistance was offered during operation.

No impairment of consciousness followed; there was no vomiting and no retention of urine. Sensation in legs remained distinctly impaired until 10 p. m. On September 30, at 1 p. m., temperature began to rise and by noon reached 103°; pulse went up only to 85. Next day temperature became normal again. Patient felt well and was discharged October 2.

Remarks.—In this case the dose of magnesium salt was too small. It was, however, in conjunction with the small dose of chloroform, apparently sufficient to permit the performance of the small operation of dilatation of the cervix.

CASE 4.—Mrs. M. McD., aged 27, October 21.

Operation.—Laparotomy for removal of appendix and right ovary and tube.

At 1 p. m. a lumbar puncture was made, about 4 c.c. of spinal fluid withdrawn and a little over 4 c.c. of a 25 per cent. solution of magnesium sulphate injected. Patient's weight was about 110 pounds—a little over 1 c.c. of the solution to 25 pounds body weight. At 4:30 p. m. there was paresis, loss of reflexes and anesthesia from the pelvis downward. Patient was moaning; pulse 94 and good. Chloroform was administered, patient was under in a few minutes and operation was begun. Patient was sometimes out of anesthesia, but a few drops of the chloroform sufficed to put her under again completely. Anesthesia was ideal; there was not the slightest resistance. Pulse 70, good quality; resp. 26. When out of anesthesia patient apparently did not feel surgical manipulations. At 4:55 p. m. operation was finished and chloroform discontinued. Sixteen cubic centimeters of chloroform were used, greatly wasted.

At 5 p. m. spinal puncture was made again, 4 c.c. of spinal fluid being withdrawn and 5 c.c. of sterile normal saline injected. This procedure was repeated three times; the last time 8 c.c. of sterile normal saline were injected into the spinal canal. Patient was in good condition. Pulse 60, respiration 26.

At 6 p. m. patient was awake, somewhat confused. At 7

p. m. mental condition was normal and sensation in lower extremities had reappeared. Pulse 70, resp. 24. Motor power returned about 9 p. m. In the course of the night there was a slight rise of temperature. On October 22 at 9 a. m. temperature was highest, 100.6, pulse 100, resp. 24. The temperature, etc., became normal in the course of the day. She vomited once, slightly, about 2 p. m. Otherwise the general condition was good. She made a rapid recovery and was discharged, cured, November 6. She was seen in January, 1906, and had had no after-effects whatsoever.

Remarks.—Although the operation in this case was more serious and extensive than in the first two cases, and although more chloroform was used, there were practically no after-effects at all. The favorable result can reasonably be ascribed to the postoperative washing of the spinal canal which was practiced in this case.

CASE 5.—C. H. B., aged 57, October 27. Alcoholic, with marked arteriosclerosis.

Operation.—Correction of malunion of Pott's fracture of right leg.

At 1:15 p. m. lumbar puncture was made; 7 c.c. of spinal fluid were removed and 7 c.c. of a 25 per cent. solution of magnesium sulphate were injected. At 1:30 p. m. there was profuse perspiration. There being no distinct anesthesia or paralysis, at 3:45 p. m. chloroform was administered and the operation was finished at 4 p. m. Sixteen cubic centimeters of chloroform were used, but the patient was not completely under its power. Pulse 60 and irregular.

At 4:30 p. m. patient was completely out of anesthesia and motion and sensation were present. His mind was in a state of confusion for about 24 hours. There was no vomiting. At 1 a. m., October 28, temperature began to rise and reached 103° by 1 p. m. It came down with fluctuations to normal by October 31. Patient was seen in the course of the winter and had had no after-effects from the spinal injection.

Remarks.—This patient's weight was about 160 pounds and he received a trifle more than 1 c.c. to 25 pounds body weight. There was some effect. For an alcoholic, 16 c.c. of chloroform are certainly insufficient to bring the patient into a state of complete anesthesia, and we may well assume that the intraspinal injection assisted greatly in keeping the patient in the required state of anesthesia. But, comparing t with the other cases, the effect must be considered as slight.

CASE 6.—Mrs. S. R., aged 27, October 31.

Operation.—Bassini for relief of femoral hernia.

At 2 p. m. spinal puncture was made, 7.5 c.c. of spinal fluid were removed; 7.5 c.c. of 25 per cent. magnesium sulphate were injected. At 4 p. m. there was no sensation of pain in legs, but tactile sensation was present. Motor power was distinctly diminished, but reflexes were present. Chloroform was administered and operation begun. At 4:15 p. m. operation was finished and chloroform was discontinued. The amount of chloroform used was only 8 c.c.

Patient was never completely under. She felt that she was handled around the lower part of the abdomen, but felt no pain and offered no resistance. At 5:30 p. m. pulse 60, resp. 20. Complete motor paralysis of extremities, very little sensation of pain, but tactile sense present in a measure. Mental state somewhat confused. One hour later patient was perfectly rational and sensation had returned. Motor power returned about 10 p. m. and reflexes about 6 o'clock next morning. Patient vomited four times.

At 1 a. m., November 1, temperature began to rise and reached 101° at 9 a. m., and it then gradually declined and became normal on November 2. She was discharged, cured, November 14. She was seen January, 1906. She had no after-effects.

Remarks.—The spinal injection of the magnesium sulphate in this case was undoubtedly the chief cause of the local anesthesia. The slight amount of chloroform used was only the means of diverting the attention of the highly hysterical patient. In this case the magnesium sulphate produced only analgesia; the tactile sense was only moderately impaired.

CASE 7.—A. A., aged 16, male, October 31.

Operation.—Operated for a large intramuscular abscess of right thigh.

At 2:30 p. m. spinal puncture was made; about 8 c.c. of spinal fluid were withdrawn and 8 c.c. of 25 per cent. solution of magnesium sulphate were injected. Patient's weight was about 120 pounds, hence he received 1 c.c. to 15 pounds body weight. At 2:50 p. m. his legs were heavy; no reflexes. At 3 p. m. motion was difficult; patient vomited. At 3:15 p. m. legs were paralyzed and anesthetic. Pulse 74, resp. 18. Operation was begun; no chloroform was given. Patient conversed and felt absolutely nothing of the operation. He vomited again a small amount of greenish fluid. At 3:50 operation was completed. Pulse 84, resp. 20. Returned to ward.

At 5 p. m. patient was in deep coma. There was complete muscular relaxation; all reflexes were absent except lid reflex. Pupils small. Pulse 70, good; resp. 11. At 6:15 p. m. pulse 72, resp. 10; other conditions were the same as before.

At 6:30 p. m. spinal puncture was made again, 4 c.c. of spinal fluid being withdrawn and 4 c. of normal sterile saline being injected. The same procedure was repeated three times more. At 7:10 p. m. the coma was not so deep; the patient resisted the opening of his eyes and groaned when disturbed. Pulse 72, resp. 15. At 8:15 p. m. pulse 80 and resp. 10 again, but he moved his head and answered questions, although very confusedly. At 9 p. m. pulse 88, resp. 22; pupils wider; patient opened his eyes again and answered questions better. At 10:30 p. m. mental condition improved; appeared to be resting comfortably; pulse 100, resp. 27; pupils still wider.

At 3 a. m., November 1, he was awake and rational; sensation in limbs had returned and he was able to move them; reflexes were absent. He complained of frontal headache and also of some pains in legs and feet. At 8 a. m. reflexes had returned. There had been no vomiting since the operation. At 1 a. m., November 1, temperature rose to 104° and remained so until 1 p. m. the same day. Pulse fluctuated between 116 and 124 and resp. between 24 and 30.

Temperature, etc., improved gradually and became normal on November 3. Patient had fever before the operation. On November 6 patient was transferred to City Hospital in good condition, where he recovered.

Remarks.—Three and a half hours after the spinal injection of magnesium sulphate this patient passed into a most complete state of general anesthesia without the aid of any other anesthetic. In that state any part of his body could have been operated on with the greatest ease. His leg was operated on under complete local anesthesia forty-five minutes after the injection. But this patient received the largest quantity of the solution: 1 c.c. to about 15 pounds body weight. Judging from our experience in the fourth case we have reason to believe that if the operation would have been followed immediately by "washing" of the spinal canal the patient might have been freed from the late general anesthesia. As it was, the late "washing" of the spinal canal shortened perceptibly the after-effects.

DISCUSSION AND CONCLUSIONS.

From the foregoing seven cases we may deduce a few conclusions.

1. Magnesium sulphate in intraspinal injection proved to be as efficient an anesthetic in human beings as it was found to be in animals. In Case 7 a certain dose of magnesium sulphate produced local anesthesia in 45 minutes after intraspinal injection and about 3 hours later a deep general anesthesia set in which lasted for many hours and which would have permitted any operation on any part of the body. Although the dose used in this case was the largest we have employed in human beings, it was still less than one-half of the dose we have regularly used with monkeys with perfect impunity. The experience in the first two cases, however, has demonstrated that even such a small dose as 1 c.c. of the 25 per cent. solution to 25 pounds body weight is capable of bringing out complete anesthesia and paralysis of the lower part of the body, although not until 2 or 3 hours after the injection. The anesthesia and paralysis observed in these cases, appearing about 2

hours after the operation, could certainly not have been due to anything else but to the magnesium salt. Even the general anesthesia which set in late in these cases was undoubtedly, in the main, due to the intraspinal injection, since the small amount of chloroform which was employed in these cases could never produce such an after-effect. In Case 4 the patient apparently could have been operated on even at that early hour without chloroform. The absence of any noteworthy after-effects in this case was surely due to the washing of the spinal canal. The washing of the canal, although carried out at a comparatively late hour, proved to be beneficial also in the seventh case; the respirations increased and all the after-effects were perceptibly shortened. In Case 4 as well as in Case 6 there was a stage of analgesia which permitted the operation, although the tactile sense was not abolished.

Case 3 has shown that a dose of 1 c.c. of the solution of magnesium sulphate to 30 pounds body weight is insufficient to carry out an operation by its aid alone, although it apparently supported, in a measure, the effect of the chloroform.

In Case 5 even a dose of 1 c.c. of the solution to 20 pounds body weight had only a moderate anesthetizing effect. This patient was an alcoholic, 57 years old, with markedly developed arteriosclerosis. Possibly alcoholism, as well as arteriosclerosis, interferes in some way with the anesthetizing effect of the magnesium salt. Possibly also there is an individual predisposition for or a resistance to the anesthetizing effect of magnesium. Our impression is that it affects younger individuals more readily than older ones.

2. It seems that the spinal injections caused a rise of temperature in all the cases. Although in the majority of the cases there were some other reasons for the appearance of fever, the setting in of the rise of temperature at about the same time and the similarity of the course of the fever in all cases made it probable that the intraspinal injection was essentially the cause. This is the more probable, since it was observed also in intraspinal injections of other substances. The course of the fever, however, was in all cases perfectly benign and disappeared after 36 or 48 hours. The pulse remained always of good quality.

Vomiting occurred in most of the cases. In Case 7, in which no chloroform was employed, vomiting occurred only twice and lightly, and only at an early stage. The frequent vomiting in Case 2 was probably not due to the intraspinal injections. It is noteworthy that in most of the cases the postoperative vomiting had only the character of regurgitation (no contraction of the abdominal muscles).

4. There was retention of urine, lasting between 24 to 48 hours, in nearly all the cases. The bowels also had to be assisted by enemata. The incontinence of feces of the first case was due to the involvement of the sphincter in the operation. We have to point out again that in Case 4, in which the spinal canal was washed immediately after the operation, there were practically no after-effects.

As far as seven cases permit any conclusions, the following statements may be made: Intraspinal injection of magnesium sulphate is capable of producing anesthesia, and, if carried out with caution, seems to be a safe anesthetic. The following plan would seem the best, at least for the present: To inject about 1 c.c. of a 25 per cent. solution of magnesium sulphate for every 18 or 20 pounds body weight and wait about 2 hours. It is probable that by that time the analgesia will be sufficiently advanced to permit the performance of an operation on any part of the lower half of the body. A small dose of chloroform, however, should be administered to divert the patient's attention and to hasten and complete the anesthesia. Immediate washing of the spinal canal should follow the operation in all cases.

A more extensive experience will show whether this method could be used also as a means for general anesthesia for operations on the upper part of the body. It goes without saying that the solutions should be sterile, the salt chemically pure, and the patient handled with proper surgical care.

Special Article

THE PHARMACOPEIA AND THE PHYSICIAN.

CHAPTER X.

LOCAL DISINFECTANTS AND ANTISEPTICS.

Lister's use of local antiseptics in surgery is usually spoken of as a discovery, but, without detracting in any way from the credit due to Lister, it should be referred to more correctly as a practical application of previous discoveries.

Reichenbach, in 1832, obtained a substance from wood tar which he named creosote. Finding later that it consisted of phenol and phenol ethers, and also finding these same substances in smoke, he concluded, and later conclusively proved, that to them is due the meat preserving activity of smoke.

Runge, in 1834, found that the phenol which he obtained from coal tar also possessed the power of preventing putrefaction. Tar and a number of products of a similar nature were long ago recommended and widely used for foul smelling ulcers, but the fact remains that to Lister is universally, and very properly accorded the distinction of having placed antisepsis in surgery on a sure basis. Since the early days of antisepsis there have been many improvements, and we now know that the most perfect cleanliness, or asepsis, that is attainable is much to be preferred even to the most elaborate antisepsis.

It is, of course, entirely beyond the scope of this series of papers to consider the details of major surgery, but the principles of antisepsis which obtain in this branch are equally applicable to minor operations, and their disregard by many, who are not surgeons, is the best justification for their present brief consideration. The necessity of scrupulous cleanliness is seen in such a simple, but admittedly important, procedure as vaccination. The careful physician will perform even this comparatively simple operation under aseptic conditions, thereby saving himself much annoyance in case of accident.

The first, and really the most important, duty of the physician with regard to infections is to see that he does not carry them to other patients. There can be no doubt that physicians have played no small part in the spread of infectious diseases, particularly in the past, but fortunately, with the better understanding of the subject, this seldom occurs now.

The disinfection of clothing and of instruments belongs to the subject of general disinfection, that of the hands and person to local disinfection.

The cleansing of the hands, as it is done in a number of American hospitals, is about as follows: "Trim and clean the nails, wash the hands and forearms for five minutes in very warm, sterile water, using green soap and scrubbing them energetically with a brush or a gauze pad, cleansing the nails again during this part of the process. Rinse the hands for three minutes in 75 per cent. alcohol, to remove soap and to aid in sterilization; then in 1 to 1,000 solution of mercuric chlorid, or in a solution of 1 to 2,000 mercuric chlorid with 1 to 40 phenol, and finally rinse in sterile, warm water." This may be somewhat more elaborate than is necessary in most cases of minor surgery, but even here it is well to err on the safe side.

For the disinfection of the whole body a full bath in warm water with the liberal and judicious use of soap is sufficient, and the clothes may undergo disinfection separately at the same time. This procedure is so simple that the physician can not escape blame should he carry infection from one patient to another through the omission of necessary precautions.

When minor surgical operations are to be performed it is always well to thoroughly disinfect the surface at and around the prospective seat of operation. For this purpose the procedure given for cleansing the hands of the surgeon is sufficient, though in some cases it may be found necessary to supplement the soap and water with oil of turpentine.

Wounds and ulcers require disinfection to destroy those bacteria which can be reached, and antiseptic dressings to prevent the development of colonies from those which escape destruction or which may afterward reach the spot.

AQUA HYDROGENII DIOXIDI.—U. S.—Solution of Hydrogen Dioxid, or, as it is frequently called, Solution of Hydrogen Peroxid, is useful for decomposing pus, in which bacteria are protected from the action of other disinfectants. It thus secures the rapid cleansing of freely exposed pus cavities or ulcers, and at the same time it acts powerfully on bacteria, though they are not all destroyed so long as any pus remains. The official solution is equal, in disinfectant power, to a 1 to 1,000 solution of mercuric chlorid. The action on pus of hydrogen dioxid is so extremely rapid that it frequently detaches small masses which may escape decomposition.

The use of this solution is not unattended with risks, particularly in sinuses or deep, partially closed wounds. Mucous membranes decompose hydrogen dioxid rapidly, and the skin slowly, with the liberation of nascent oxygen. It is not certain whether the bactericidal property is due to the liberation of oxygen alone, or whether the preparation possess a special influence on the micro-organisms. The decomposition whereby the oxygen is liberated is supposed to depend on a ferment, catalase, which is widely distributed, and, as the preparation loses its bactericidal powers, once the oxygen has been liberated, it is of course useless as an antiseptic, though extremely useful as a disinfectant. Hydrogen dioxid has an especial reputation in the treatment of sore throat and even diphtheria, for which it is used as a spray or as a gargle with entire safety. It attacks metals readily, and only rubber or glass should be used in connection with it. Diluted with an equal amount of water, it is an excellent mouth wash, but not infrequently contains a little acid, and the mouth should be rinsed after its use.[1]

After the disinfection of ulcers and wounds an antiseptic dressing is applied. Cotton, gauze and lint impregnated with various antiseptics are found on the market. Only the active substances that are used in this connection will be discussed, as the application of dressings belongs to surgery.

IODOFORMUM.—U. S.—Iodoform, Tri-iodomethane, is usually obtained by the action of iodin on alcohol, in the presence of an alkali or an alkaline carbonate. Iodoform was discovered by Sérullas, in 1822, but was not used in medicine until some time after 1837. Despite its disagreeable penetrating odor, iodoform continues to hold first place among local antiseptics, used for the dressing of wounds. At first it was supposed to share with chloroform (from which it differs chemically only in the iodin displacing the chlorin) a strong antiseptic action, but, in the case of iodoform, this has been found to be but slight; it is, however, materially increased by the slow liberation of iodin. When its local use as a dressing is long continued, enough of it may be absorbed to produce poisoning, which does not, however, result in a typical narcosis, such as chloroform produces, but gives rise to disturbances of cerebration, headache, delirium and other symptoms. These are due to the iodoform molecule; but exanthemata, which are sometimes severe, are usually attributed to the liberated iodin, which, when liberated, is thought to circulate in the blood as an alkaline iodid or in combination with albumin. Hematuria, albuminuria and urinary casts may also result from its absorption, and many attempts have been made to find a substitute for iodoform without its poisonous effects.

Some surgeons deny that iodoform exerts any direct antiseptic power, and attribute the benefits from its use to its limitation of the secretion on which the bacteria would otherwise develop. Binz observed that iodoform lessened the emigration of leucocytes, and it is said to be particularly useful in local affections with free secretions.

When iodoform is intended for use as a dusting powder, its odor may be rendered very much less disagreeable by incorporating with it 4 per cent. of coumarin. The following has been used to some extent:

℞. Iodoformi	3v	20
Coumarin	gr. xv	1
Acidi borici q. s. ad	3xiii	50

Misce bene. Sig.: To be used as a dusting powder.

Pulvis Iodoformi Compositus (N. F.), containing Iodoform 20, boric acid 30, naphthalin 47, and oil of bergamot 3 parts, also constitutes a useful and comparatively unobjectionable antiseptic dusting powder.

Where iodoform is to be used in the form of an ointment the addition of from 5 to 10 per cent. of balsam of Peru, or of 2 per cent. of oil of anise has been found to be advantageous. The addition of oil of anise, in somewhat larger quantities, has also been recommended for iodoform gauze, particularly when the gauze is to be used in appreciable quantities or for any continued length of time. If the antiseptic action of iodoform is due to the liberated iodin, then necessarily many of the proposed substitutes must be practically devoid of antiseptic power, since the iodin is too firmly bound to be liberated by the tissues.

IODOLUM. — U. S. — Iodol designated chemically as tetra-iodopyrrol, one of the recent additions to the Pharmacopeia, illustrates this particular condition very well. The iodin in this case is so thoroughly combined that the substance has been recommended as being comparatively non-toxic. Another class of preparations, such as nosophen, losophan and europhen, depends for the antiseptic action largely on the cresol or the phenol compounds united to the iodin. Loretin and vioform are combinations of iodin and quinolin, and there is no reason to suppose that they have any advantages over the other preparations just mentioned.

THYMOLIS IODIDUM.—U. S.—Thymol iodid, much better known by the formerly trade-marked name "Aristol," is a condensation product of two molecules of thymol with two atoms of iodin, and more properly, therefore, should be designated by its true chemical title, dithymol di-iodid. This preparation, which really belongs to the phenol group of iodin compounds, has met with a better reception than many of the other iodoform substitutes. It is probable, now that the patents have expired on aristol and the substance is available at much more reasonable prices, that its popularity and use will be extended still further. This, however, is problematic. Schmiedeberg specifically states that aristol, losophan, sozoiodol, picrol, loretin and antiseptol, all of which contain iodin, are not more actively antiseptic than are the corresponding iodin free compounds, while the latter are, of course, much less expensive. Since the number of possible combinations of this type is practically unlimited, we will do well to exercise circumspection in accepting those which appear from time to time.

PHENOL.—U. S.—Acidum Carbolicum (U. S. P., 1890) is hydroxybenzene, and may be obtained from coal tar by fractional distillation and subsequent purification, or may be made synthetically. In its pure state it occurs as colorless, needle-shaped crystals, or as a white crystalline mass.

PHENOL LIQUEFACTUM.—U. S.—Liquefied Phenol, Liquid Carbolic Acid, contains from 85 to 89 per cent. of absolute phenol, and is the form in which this substance is usually seen and used.

Phenol or carbolic acid is now used as an antiseptic dressing for wounds very much less frequently than it was some years ago, because of the danger of poison due from absorption. It may be applied in the form of a 2 per cent solution in water; stronger solutions are used, but many cases of gangrene

1. An agreeable, and at the same time efficient, mouth wash is obtained by mixing equal parts of aqua hydrogenii dioxidi, liquor antisepticus (U. S.) and a saturated solution of potassium chlorate.

have followed the use of even dilute solutions on the extremities, particularly the hands, for a continued length of time.

A sharp distinction is to be drawn between the anesthetic and antiseptic uses of phenol. Solutions of phenol in oil, or mixtures with fats, are excellent anesthetics when brought in contact with painful surfaces or wounds, but they possess very little antiseptic action, because phenol is more soluble in fats and oils than in water or weak saline solutions, hence it does not leave the oil to penetrate the bodies of bacteria, without doing which it does not injure them.

Practically the same holds true of its affinity for alcohol, and it is for this reason that alcohol is such an excellent antidote for carbolic acid, externally as well as internally. The absorption of phenol is followed by its appearance in the urine, which usually becomes dark greenish or nearly black in color.

CRESOL.—U. S.—and its more desirable form:

LIQUOR CRESOLIS COMPOSITUS.—U. S.—Compound Solution of Cresol, has been mentioned under general disinfectants. The latter compound has been extensively used, particularly in the form of one or the other of the numerous proprietary preparations, as a local disinfectant and also as an antiseptic. The saponaceous properties of this particular preparation make it very useful in a variety of instances in which a detergent action is to be attained in addition to the disinfection.

THYMOL.—U. S.—This is a phenol occurring in the volatile oil of thymus vulgaris and in some other volatile oils. It possesses strong antiseptic properties, but its comparative insolubility in water, 1 in 1,100, has interfered materially with its extended use. Thymol iodid, the only official combination of thymol, has been referred to in connection with iodoform substitutes.

An ideal disinfectant, or antiseptic dressing for wounds, should act strongly on the living protoplasm, should be slowly absorbed, and should affect the central nervous system but slightly after absorption. Phenol has the disadvantage of being rapidly absorbed and of profoundly affecting the central nervous system. Thymol, being but slightly soluble in water, but volatile at ordinary temperatures, is slowly absorbed, and, as its excretion keeps pace with its absorption, there is little danger that it will exert a poisonous action when used locally.

RESORCINOL.—U. S.—Resorcinum (U. S. P. 1890), a diatomic phenol that is usually referred to by its popular name, resorcin, was at one time extensively used in dermatologic practice, but is now seldom employed except for scalp diseases and sometimes internally.

PYROGALLOL.—U. S.—This is better known as Pyrogallic Acid and is a triatomic phenol, sometimes used in dermatologic practice.

ACIDUM SALICYLICUM.—U. S.—Salicylic Acid has been used to some extent as a local antiseptic, particularly in the form of dusting powders, diluted with talcum, zinc oxid or boric acid. Salicylic acid is used extensively in dermatologic practice, particularly in the form of ointment. It is only slightly soluble (1/310) in water.

The practice of dermatology involves a special knowledge of antisepsis, and the subject can be given only general consideration at this time, so that we must content ourselves with little more than a simple enumeration of some of the official substances that are used, merely suggesting the number and variety of the available materials.

PIX LIQUIDA.—U. S.—Tar, a product obtained by the destructive distillation of the wood of one of several species of *Pinus*, has been widely used in the treatment of skin diseases, usually in the form of an ointment.

UNGUENTUM PICIS LIQUIDÆ.—U. S.—Tar ointment contains 50 per cent. of tar.

OLEUM CADINUM.—U. S.—Oil of Cade, or Oil of Juniper Tar, is a product of the dry distillation of *Juniperus Oxycedrus* and is closely allied to tar, being used in the same way.

BALSAMUM PERUVIANUM.—U. S.—Balsam of Peru has already been noted under expectorants. Its antiseptic properties are probably due to the benzoic and cinnamic acids which it contains. It is used in dermatology, either in ointment or in collodion.

NAPHTHALENUM.—U. S.—Naphthalene or Naphtalin and

BETANAPHTHOL.—U. S.—Naphtol, are used in dermatologic practice, though the former, at least, has practically fallen into disuse for medicinal purposes.

Among other substances having antiseptic properties, used locally, is

SULPHUR PRECIPITATUM.—U. S.—Precipitated Sulphur. This and the other official forms of sulphur have been mentioned in connection with cathartics. Sulphur constitutes a most important agent in the treatment of a number of skin diseases. It is applied either in the form of lotions or of ointments. For the former, precipitated sulphur is usually preferred, while in ointments either

SULPHUR SUBLIMATUM.—U. S.—Sublimed Sulphur, or

SULPHUR LOTUM.—U. S.—Washed Sulphur is used. In the official

UNGUENTUM SULPHURIS.—U. S.—Sulphur Ointment, 15 per cent. of washed sulphur is directed to be used. This ointment is now only half the strength of that formerly official and is, therefore, better suited as a mildly stimulating antiseptic application.

SODII THIOSULPHAS.—U. S.—Sodium Thiosulphate, better known as Sodium Hyposulphite, is another useful antiseptic that is now little used medicinally, except in dermatology. It is freely soluble in water and is usually prescribed in the form of a lotion. It is said to be particularly useful in the destruction of parasitic fungi.

GLYCERINUM.—U. S.—Glycerin is not alone useful as a mild antiseptic, but is also extensively used as a vehicle for many other substances in the treatment of skin lesions.

GLYCERITUM AMYLI.—U. S.—Glycerite of starch is a preparation that was introduced many years ago to serve as an ointment base in cases in which lard or fat might prove objectionable.

Mercurials.

HYDRARGYRI IODIDUM RUBRUM.—U. S.—Red Mercuric Iodid or Biniodid of Mercury is the most active of all the official germicides and antiseptics. It is comparatively expensive, however, and is only slightly soluble in water.

HYDRARGYRI CHLORIDUM CORROSIVUM.—U. S.—Corrosive Mercuric Chlorid, Bichlorid of Mercury, Mercuric Chlorid, or, more popularly, Corrosive Sublimate, is by far the most popular and most generally used of all local chemical disinfectants and antiseptics. It is extremely poisonous and many fatalities have occurred from its use, even in the vagina and in the washing of wounds. Gauze impregnated with a solution of mercuric chlorid is often placed over small or closed wounds to prevent the access of bacteria. It is widely used as an antiseptic and disinfectant, but it is extremely caustic and can not be applied to mucous membranes and to open wounds except in very dilute solutions, for fear of absorption.

Mercuric chlorid is slowly but completely soluble in 13 parts of water and in 3 parts of alcohol. The solubility of this substance in water is much facilitated by the presence of other soluble chlorids. This fact has been utilized in the preparation of the commercial tablets of mercuric chlorid that are sold for making antiseptic solutions. These tablets usually contain about 0.5 gm. (7.5 grains) each of mercuric chlorid and ammonium chlorid, the sal alembroth of the alchemists, which, when dissolved in 500 c.c. (1 pint) of water make a solution of 1 to 1,000. This solution is useful for the disinfection of the hands, for walls and floors and for many fabrics that are not injured by water.

Mercuric chlorid attacks metals and therefore must be avoided with metal instruments. It is a very popular insecticide and a number of the mercurials are used as parasiticides, notably for pediculi. For this purpose, however, the various ointments of mercury are preferable.

UNGUENTUM HYDRARGYRI.—U. S.—Mercurial Ointment, contains 50 per cent. of mercury.

UNGUENTUM HYDRARGYRI DILUTUM.—U. S.—Blue Ointment, a new addition in this edition of the Pharmacopeia, contains 33 per cent. of mercury and conforms more closely to the proposed international standard for mercurial ointment. Another ointment that is sometimes used as a parasiticide is

UNGUENTUM HYDRARGYRI OXIDI RUBRI.—U. S.—Ointment of Red Mercuric Oxid, or Red Precipitate Ointment, containing 10 per cent. of red mercuric oxid.

Antisepsis of the Mucous Membranes.

The antisepsis of the mouth is important, not only because of the infectious diseases pertaining to it, but also because of the excellent opportunity that is afforded to micro-organisms to multiply there in enormous numbers on the particles of food in the cavities of teeth or wedged between them. That this is true is shown by the putrid smell acquired by particles of meat which remain but an hour or so in the mouth. The extent to which bacteria may increase may be inferred from the calculation, given by Novy, that 30,000,000,000 contain less than one-sixth of a milligram (1/400 grain) of organic matter.

The main factor in securing antisepsis of the mouth is cleanliness. If the teeth are carefully cleansed and all organic matter removed, the bacteria have less on which to thrive, and mild antiseptics then fully suffice to keep the number within bounds.

LIQUOR ANTISEPTICUS.—U. S.—Antiseptic Solution is a new addition to the Pharmacopeia, containing ½ per cent. of boric acid with aromatic antiseptic volatile oils. It is designed to be used as a mild antiseptic lotion or wash.[2]

The official antiseptic solution is also useful as a gargle, preferably diluted with equal quantities of water. The use of hydrogen dioxid as a spray or gargle has been mentioned, also its use in connection with the official antiseptic solution.

POTASSII CHLORAS.—U. S.—Potassium Chlorate, while not a particularly active antiseptic, has long been favorably known to be a desirable addition to gargles and mouth washes. It is soluble in 16 parts of cold water and is generally used in saturated solution, from which traces of chloric acid may possibly be liberated. Alum and boric acid are also useful as gargles.

After the use of any of these gargles the mouth should be well rinsed with water to prevent injury to the teeth.

The antisepsis of the nasal passages is usually accomplished by thorough cleansing with warm saline solution (0.9 per cent.), nine grams (135 grains) to a liter (quart) of water, or by a mild alkaline solution made by adding nin grams (135 grains) of sodium bicarbonate to the saline solution just mentioned, after which a mildly antiseptic solution, such as the official, is used as a spray or douche, or, in lieu of this, one-tenth of 1 per cent. of phenol may be added to the saline douche, but the latter is not recommended as a routine practice.[3]

It may be permissible here to enumerate some of the substances that have been or are used as mild antiseptic applications to the mucous membranes.

ACIDUM BORICUM.—U. S.—Boric Acid, generally referred to as Boracic Acid, is quite free from toxicity. It is soluble in about 16 parts of water and is but slowly absorbed.

GLYCERITUM BOROGLYCERINI.—U. S.—Glycerite of Boroglycerin, contains 30 per cent. of boric acid and has the same uses.

SODII BORAS.—U. S.—Sodium Borate, or Borax, has an alkaline reaction and is sometimes preferred to boric acid on this account. It is soluble in sixteen parts of water.

SODII CHLORIDUM.—U. S.—Sodium Chlorid, common table salt, has been in use as an antiseptic from time immemorial, and the only reason we have for presenting it here is to call attention to the fact that the Pharmacopeia recognizes it as a valuable article of the materia medica and provides certain standards and tests for purity.

SODII PHENOLSULPHONAS.—U. S.—Sodium Phenolsulphonate, the Sodium Sulphocarbolate of former editions of the Pharmacopeia, is another mild antiseptic that has limited but well-defined uses.

Practically all the salts of the alkalies have well-defined antiseptic properties, but it is obviously not necessary to recount all of them at this time.

Complete disinfection of the nose, mouth, throat, vagina and urethra is not practicable, and is not even necessary; the main thing to be sought is the cleansing of those regions from pus and organic matter on which bacteria thrive. Mucous membranes decompose the solution of hydrogen dioxid with such copious evolution of oxygen that it can not be used in the nose, and because of this rapid action by the mucous membrane itself, a large amount frequently repeated is necessary to completely disinfect such cavities.[4]

The antisepsis of the eye is confined largely to the use of camphor, boric acid and sodium borate. In virulent affections more active antiseptics are sometimes indicated; in these cases weak solutions of mercuric chlorid, copper sulphate, zinc chlorid, silver nitrate or formaldehyd are used. These substances, however, are all extremely irritating and great caution is required. Their use by the general practitioner is not advised.[5]

Some years ago J. Stilling recommended the use of the anilin colors, more especially pyoktannin blue and pyoktannin yellow, as weakly antiseptic applications to the eye. Pyoktannin yellow is still used to some extent either as powder, pencil or in watery solution.

Burns or scalds resulting in destruction of the skin should be treated antiseptically. Treves directs that the burn be washed with a solution of hydrogen dioxid and then with a solution of boric acid; the vesicles are then opened with an aseptic needle and the surface dusted with iodoform and dressed with aseptic cotton.

LINIMENTUM CALCIS.—U. S.—Lime Liniment, or Carron Oil, so called from the name of the iron works in England where this preparation had its origin, consists of equal parts of lime water and linseed oil. It has long been in use as a popular dressing for superficial burns and constitutes a readily applied and effective non-antiseptic remedy that rapidly allays the accompanying pain. If there has been extensive destruction of tissue, this remedy should be avoided, as it is not alone difficult to remove, but also forms a covering beneath which bacteria may proliferate safe from the reach of antiseptics.

POTASSII PERMANGANAS.—U. S.—Potassium Permanganate,

---

2. The official antiseptic solution is slightly acid. When an alkaline antiseptic mouth wash is desired it will be well to use the "Alkaline Antiseptic Solution" of the National Formulary. Either one of these preparations can readily be prepared by any trained pharmacist. They are very inexpensive and should be given the preference over the various nostrums that are not alone exploited as local antiseptics, but are also advertised as sure cure remedies for a very large number of intestinal disorders. The working formula for the alkaline antiseptic solution is as follows:

Potassium bicarbonate		
Sodium benzoate, āā	℥ss	32
Borax	℥ii	8
Thymol	grs. iii	2
Eucalyptol,		
Oil of peppermint, āā	m. iii	2
Oil of wintergreen	m. vi	2
Tincture of cudbear	℥iv	15
Alcohol	℥ii	60
Glycerin	℥viii	250
Water, sufficient to make	℥xxxiv	1000

3. The pharmacopeia of the German Hospital, Philadelphia, contains a formula for an alkaline antiseptic tablet that has found favor with some. It contains 0.25 gm. (about 4 grains) each of sodium bicarbonate, sodium borate, sodium chlorid and sodium phenosulphate, with 0.005 gm. (about 0.1 minim) of oil of cinnamon. One of these tablets (the same mixture can also be directed in powder) is to be dissolved in six tablespoonfuls of recently boiled water and used as a wash for the nose.

4. For use in the vagina, where a simple detergent and antiseptic action is sought, the official Liquor Cresolis Compositus in 0.5 to 1 per cent. solution will be found to be all that is required. When an astringent effect is desired the following formula for an antiseptic astringent powder will be found to answer the purpose very well:

℞. Sodi boratis	℥ii	60
Alumen exsicc.	℥x	40
Thymol,		
Phenol,		
Eucalyptol,		
Olei gaultheriæ, āā	gr. viii	5

M. Sig.: A heaping teaspoonful to be dissolved in one liter (1 quart) of hot water, to be used as a douche.

5. The method of using boric acid in the eye varies greatly, but usually a 2 per cent. solution of boric acid in equal parts of distilled water and camphor water will be found to be sufficient. When it is desired to use sodium borate in connection with boric acid the following will be found satisfactory:

℞. Acidi borici	gr. xv	1
Sodi boratis	gr. xxx	2
Aqua dest.,		
Aquæ camphoræ, āā	℥iss	50

already referred to under the head of general disinfectants, is often considered to be devoid of antiseptic properties because of the readiness with which it oxidizes all organic matter. It is true that potassium permanganate is readily decomposed by the organic matter with which it first comes in contact, and that it would be unusual indeed to find bacteria the only form of organic matter present in any one case. When we remember, however, that a very large number of bacteria represent but an infinitesimally small amount of organic matter, we will appreciate why potassium permanganate is capable of destroying vast numbers of micro-organisms in those cases in which its action can be confined to them.

This substance finds its greatest usefulness as a local application in rendering foul ulcers odorless. For this purpose a fairly strong solution, 2 per cent., is freely used as a wash. Much weaker solutions are sometimes used with great benefit as urethral irrigations in gonorrhea and as vaginal douches. A hot 1 per cent. solution of potassium permanganate will be found extremely useful as a deodorizer for instruments after use in the vagina while awaiting sterilization. Potassium permanganate destroys some alkaloids much more quickly than others, e. g., morphin more readily than strychnin. It can not enter the circulation, hence when swallowed it can act only on the substances found in the stomach. Obviously it is not suited for hypodermic injections.

Clinical Reports

SARCOMA IN A YOUNG CHILD.

FRED S. SPEARMAN, M.D., C.M.
WHITING, IOWA.

A number of interesting points are to be noted in connection with the following case:

1. The extreme youth of the patient, so that the malignant growths or the causes favoring their production must have been present almost, if not quite, from the time of birth.

2. The occurrence of tumors in several generations of the patient's family, showing an apparent hereditary tendency to neoplasms.

3. The marked displacement of the heart and spleen from their normal locations as the result of pressure by the tumor in the lung.

Patient.—E. S., born Nov. 15, 1902, male.

Family History.—Parents are both healthy; their occupation farming. A brother and sister are also in good health. Father's father and grandmother died from carcinoma. Both died years before the birth of my patient. Father's mother had an epulis removed about six years ago. Another growth came on another portion of the gums a year or so later, but disappeared of itself.

Previous History.—The child was never very robust, but had had no serious illness before the present one.

Present Illness.—I saw the patient for the first time on July 10, 1905. The parents stated that a little more than a year previously they had noticed an enlargement in the right side of the boy's scrotum. This had grown steadily but slowly for the first eight or nine months, but since then more rapidly. It did not seem to be painful at any time, but lately, on account of its increasing bulk, had caused some inconvenience, and the child appeared slightly nauseated at times.

Examination.—This showed a tumor of an ovoid shape about half the size of one's fist in the right side of the scrotum. It was solid, smooth, not translucent, no fluctuation was present or nodules felt, and there was no tenderness on pressure. The skin over the tumor was normal, there was no redness or sign of ulceration. The left testicle could be felt in the upper part of the scrotum and was of normal size. The child was bright and intelligent. He was of rather slender build and his complexion was tanned. Evidences of rachitis were present, as shown by a rather large head, somewhat box-shaped, and a slightly developed rosary, which became more pronounced as the case progressed. I advised operation.

Operation.—A trocar was introduced, but no fluid obtained. An incision about one and one-half inches long was made through the superficial tissues into the growth. This was of a reddish-gray color, homogeneous, was friable, of about the consistency of rather old bologna sausage, and was adherent to the tunicæ, which were considerably thickened. I got out the growth piecemeal, removing portions of the tunicæ also. A small quantity of clear fluid escaped when the upper part of the tumor was removed. Chloroform was the anesthetic used, and I noticed that the child did not breathe well toward the last, although the heart's action was fairly good throughout. Recovery was uneventful, and I let the parents do the dressing after the first week. There was a slight serous discharge for a time from the wound, but it had practically healed by July 26.

I sent the tumor to Dr. G. S. Browning of Sioux City for examination, who pronounced it a fibrosarcoma containing a large proportion of fibrous tissue.

After the operation the boy's general health improved for a time, his appetite gained and he played more with the other children.

Further History.—August 10 the parents brought him to me again. They said that he had seemed listless for a few days, caring neither to eat nor play and showing some nausea at times. His skin and conjunctivæ were slightly jaundiced. As the weather was very hot at the time, I attributed his condition to this and did not examine him closely, but gave him a calomel purge and a bitter stomachic mixture. August 13 he was again brought in, as he was no better. Jaundice was more marked, and the mother informed me that the nausea was increased and that he had complained at times of pain in the left side in the region of the lower ribs.

Examination.—Percussion showed the area of liver dullness extended nearly an inch below the costal margin. On the left side there was an area of dullness reaching from about the lower level of the fourth rib in the anterior axillary line to an inch below the border of the ribs. This dullness extended to the spine behind and nearly to the median line in front. On palpation a firm mass could be felt below the ribs. Auscultation revealed an absence of breath sounds over the lower area of pulmonary dullness and faintness in the upper portion. There was less expansion of the left side of the chest. The apex beat of the heart was displaced nearly to the left border of the ensiform cartilage. Considerable meteorism was present. Pulse was about 140 and temperature 99. I suggested the possibility of an internal growth similar in nature to that occurring in the testicle, and judged from the physical signs present that the liver and spleen were probably involved, as well as the lung. An examination of the urine made a few days afterward was negative. In view of the autopsy findings, later examinations, which I omitted to make, would no doubt have revealed renal involvement.

The patient was put to bed on liquid diet, and under fair-sized doses of calomel the jaundice disappeared to a great extent in a short time. At first the stools were bile-stained, but afterward became slate-colored, remaining so until the end. There was considerable trouble throughout on account of meteorism, requiring constant use of purgatives and enemata. The dullness extended on both sides quite rapidly, and the child's respiration became continually more embarrassed. An aspirating needle, introduced into the left chest on August 21, brought only a small amount of bloody fluid. The following day Dr. R. E. Conniff of Sioux City saw the case with me and agreed in the probable diagnosis of an internal sarcoma. A blood count made by him showed the white cells to number 35,000 to the c.mm.

At this time there was a marked bulging out of the ribs on the left side behind and laterally, although the intercostal spaces did not bulge. The dull area on both sides was nearly two inches below the costal margin and the liver was plainly palpable. The outlines, both of it and the tumor on the left side, could be seen through the abdominal walls. On deep pressure on the left side of the abdomen at the level of the umbilicus a hard body could be felt, which I thought to be a nodules in the large intestine. The apex beat was displaced to

within one inch of the right nipple and about one-half inch below. To and fro murmurs were present. They were harsh, prolonged, and of a somewhat ringing or humming quality, giving the impression of tenseness, like the sudden stretching of an elastic band. Pulse rate was about 160 and very weak, respirations over 40, no rise in temperature. There was slight puffiness of the eyelids, especially the right one, and the superficial veins on the right side of the neck and over the liver were distended. Priapism was present throughout the latter part of the case, being more marked after micturition. A condition of phimosis present may have had something to do with this, as well as the splenic involvement. There was no urinary suppression at any time, although the quantity was decreased. The child became continually more emaciated, his breathing more and more difficult, as toward the last air entered only the very apex of the left lung, accessory muscles of respiration were brought into play, the heart's action became faster and weaker, and on September 1 he died.

Autopsy.—This was performed the next day. An incision was made from the ensiform cartilage to the umbilicus through the abdominal wall, which was very thin. The diaphragm could be seen bulging downward on the left side and was very tense on account of pressure of the growth from above. On incision the tumor was found closely adherent to the diaphragm, which formed its base. It was of a spongy, stringy consistency and nearly all of the left lung was involved. The mass was softer in the center, being almost semi-fluid, and portions removed were of a grayish color, slightly tinged with pink. The spleen was not much enlarged and was shoved down to the level of the umbilicus. The liver extended down to the same level, was very friable, and of a lighter color than normal, and yellow patches and streaks were present throughout. A whitish fluid escaped from the cut or broken surfaces on squeezing. The kidneys were enlarged and engorged, being of about the same color as the spleen.

Specimens of the different organs were sent to Dr. Henry Albert, state pathologist, of Iowa City, for examination. He reported that the pulmonary growth belonged to the class of endothelial sarcomata, although the arrangement of the cells was such that many pathologists would call the growth a carcinoma. The liver showed subacute inflammation. The spleen had distinct areas of inflammatory changes, with infiltration of round cells, and the kidneys manifested a distinct acute diffuse nephritis. Neither liver, spleen nor kidneys revealed any evidences of malignancy, however.

PNEUMONIA COMPLICATED BY MENINGITIS.

W. H. AXTELL, M.D.
Surgeon Northern Pacific Railway.
BELLINGHAM, WASH.

I report the following because of its infrequent occurrence:

History.—Mrs. W., aged 32, family history negative, very sparely built, has one son 5 years of age, and has had no illness since childhood. The present illness began Nov. 28, 1904. In the morning she had a sharp chill, followed in the afternoon by high temperature and a slight pain in the right lower chest. During that night and the forenoon of the next day the pain became very much augmented.

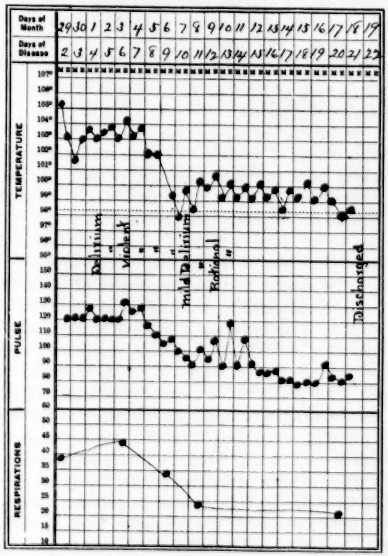
I saw her at 3 p. m. on November 29. Her temperature then was 105 1/5; pulse, 140; respiration, 36 and panting in character; she was cyanotic. Auscultation revealed crepitant rales in the lower lobe of the right lung in the axillary line. The area of dullness on percussion was about the size of a silver dollar. The pleurisy extended over a greater part of the right lateral chest. There was slight delirium when partially asleep.

Diagnosis.—Lobar pneumonia, with pleurisy.

Course of Disease.—She was moved to the hospital the same evening. The course of the disease was tempestuous, but followed that of a typical pneumonia, the crisis occurring on the eighth day. On the third day slight meningeal symptoms developed. These began with a very sharp frontal headache, the pain of which was very distracting. The pupils, at first contracted, were dilated after the fourth day. There was some rigidity of the muscles at the back of the neck, but no convulsive movements. The heart showed no signs of depression or of inflammation. The delirium, at first mild, increased in severity until, on the day of the crisis, she became a raving maniac.

Osler says: "Meningitis is usually associated with endocarditis and occurs in 8 per cent. of fatal cases and endocarditis in 25 per cent. of all cases."

This woman had no heart complications whatever. Two days before the crisis, when the temperature was the highest, the patient became so violent that it required the combined effort of two nurses, night and day, to restrain her. On the twenty-first day of the disease she was discharged from the hospital, thoroughly convalescent. Up to the present time her mental condition has remained normal and there has been no evidence of insanity. The treatment was simply supportive. The ice cap was applied for the relief of the head symptoms and cool spongings for the temperature.



POINTS OF INTEREST.

1. Complication of meningitis without endocarditis.

2. The violent nature of the disease itself. (The meningitis in no way retarded or altered the usual course of the disease or lengthened its duration.)

3. The heart during the whole course of the disease and without special treatment showed very little depression.

4. A study of the chart shows a marked similarity in the variation and fluctuation of the delirium, temperature, pulse and respiration.

5. Of the many authorities consulted, Osler is the only one who particularly mentions meningitis as a complication of pneumonia. Tyson in his recent work simply calls attention to Osler.

6. Complete recovery.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

[*Further information on second advertising page following reading.*]

SATURDAY, MARCH 3, 1906.

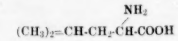
THE SYNTHESIS OF PROTEIDS.

When the average medical man who has not had a recent training in chemistry sees an article on the modern progress in the study of the proteid molecule, he is generally of the opinion that the contents will be beyond the range of his chemical knowledge and passes the matter by. The fundamental principle of the structure of the proteid molecule, however, is not beyond the comprehension of the man who possesses but very little knowledge of chemistry. The same is true of the principles underlying the experiments of Fischer and Curtius in the synthesis of proteids. As these studies in proteid chemistry have produced what are probably the most important advances made in the fundamental principles of physiologic chemistry and biology for many years, we feel it our duty to attempt to explain at least the essential principles of the subject to our readers.

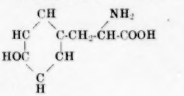
The first insight into the composition of the proteid molecule was obtained by studying the products obtained by splitting it up by means of various agencies, such as the digestive ferments, boiling acids, superheated steam. After passing through stages in which albumoses and peptones are produced, we eventually obtain a collection of simpler substances which are dissimilar to the original proteids. The longest known among these substances are leucin and tyrosin, but they are merely two of a great number of similar bodies, nearly twenty of which have already been isolated in pure condition and thoroughly identified. The important thing to bear in mind about these substances is that they are the elementary components of the proteid molecule, from which it is built up. The German writers usually refer to them as the *Bausteine* (building stones) of the proteid molecule. It has been firmly established that they exist, ready formed, in the proteid molecule, and that the process of digestion by trypsin, or by boiling acids, or by any other means, merely consists in separating these building stones from one another, so that the entire structure falls apart, and in this way we obtain the single components of which it was formed.

The next thing to take into consideration is the chemical structure of these substances, and here lies the key to the problem, for we find that each one of them is possessed of a common chemical grouping to which it owes its most essential properties. For example, let us examine the structural formulas of a few of the *Bausteine*.

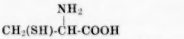
Leucin has the formula,



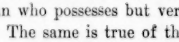
Tyrosin is



Cystin

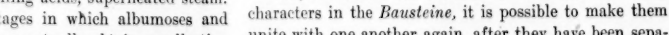


It will be observed that each building stone is an acid, which has an NH_2 group (amido group) substituted for a hydrogen atom on the carbon nearest the acid radicle (COOH), and hence they are called amino acids. It makes no difference what the rest of the radicles are, whether they are simple chains (leucin) or members of the aromatic series (tyrosin) or sulphur-containing bodies (cystin), without exception, this relation of an NH_2 group to an acid radicle is constant, as in this formula:



Through this arrangement every one of the constituents of the proteid molecule is provided with a group with a strong basic character (NH_2) and a group with a strong acid character (COOH), and hence it is possible for them to unite with each other in indefinite numbers and, because of the great variety of individual substances, in practically an almost infinite number of combinations. It is believed that it is in just this way that the proteid molecule is built up.

Now, because of the existence of both acid and basic characters in the *Bausteine*, it is possible to make them unite with one another again, after they have been separated during the process of splitting of the proteid molecule. (This process of splitting is called "hydrolysis," because, in the reaction, water is taken up by the substances.) By artificially uniting *Bausteine* in this way Curtius in Heidelberg, and more particularly Emil Fischer in Berlin, have attempted to rebuild a proteid molecule. The bodies so formed are called "polypeptids," and the process by which they are made may be illustrated by showing the reaction by which the simplest one of them, glycyl-glycin, is formed through the union of two molecules of glycocol, the simplest of the *Bausteine*.



It should be noticed that here, in the building-up process, water is split off, which corresponds to the fact that water is taken on (hydrolysis) in the breaking-down process. By means of such reactions it has, up to the present time, been possible to build up large molecules containing as many as six or seven of the *Bausteine*, and it is only a matter of time, labor and money before much larger molecules may be formed.

It must not be imagined that the structure of the complete proteid molecule is simply a long straight string of amino acids joined only in the same way as the components of glycyl-glycin. The existence of diamino acids, of benzene rings, of hydroxyl groups as in serin or tyrosin, of ring compounds as pyrolidin carbonic acid, of substances with two acid groups as glutaminic and asparaginic acid, adds complications to the formation until it is impossible to estimate just how all the various building stones may be arranged. One must also bear in mind the size of the proteid molecule, which Hofmeister has estimated (for serum albumin) as having a molecular weight of 10,166, with an empirical formula of $C_{450}H_{720}N_{116}S_6O_{140}$, and for hemoglobin the molecular weight has been estimated at 16,669. Within such a "giant molecule" there is room for variety almost beyond computation.

The question that the practical man will probably ask at this point is: "Are these polypeptids proteids; has a proteid molecule yet been formed?" The answer to that must be as follows: Polypeptids are not proteids in the sense that egg albumin or fibrin are; they are crystalline, soluble substances, and much smaller in size and molecular weight than even the peptones, which are the smallest divisions of the proteid molecule that retain most of the proteid characteristics. They are, however, probably intermediary between the peptone and the amino acids into which it splits, and they possess among others the following very important characters that are exhibited by proteids: First, they give the well-known biuret reaction, by which we usually distinguish peptones; second, and most important, they are split up by trypsin, exactly as are the proteids, liberating the *Bausteine* again. As the enzymes are such specific substances, acting only on molecules, with very specific natures and structural configuration, this is very strong evidence of the close relation of these synthetic products to the larger molecules that are ordinarily called proteids.

It should also be borne in mind that neither Emil Fischer or any other scientist expects in this way (or in any other way) to "create life in the test-tube." That is a fantasy that exists only in the minds of the ill-informed. It is hoped, indeed expected, that true, typical proteids may eventually be synthesized, but the production of a proteid is in absolutely no way comparable to the production of a living cell.

THE PARASITIC ORIGIN OF MALIGNANT NEOPLASMS.

The number of observers who have discovered the cause of malignant neoplasms in the past ten or fifteen years almost equals the number who have found the parasite of syphilis. Bacteria, yeasts, protozoa, all the different varieties of minute animal and vegetable life, have been, in turn, incriminated only to be dismissed from the bar of professional opinion with the verdict of not guilty, or the more canny one of "not proven." The subject seemed to have been attacked from all possible sides and tested in all possible ways, but, judging from the recent work of Schmidt,[1] methods of attack are still open.

If cancers and other malignant growths are due to parasites, there surely must be some reason why we can not see these micro-organisms. Past experience with other parasites furnishes a variety of explanations. The parasite may be ultramicroscopic, it may be unstainable by methods at present known, or it may so closely resemble the cells of the host as to be indistinguishable. Schmidt thinks that he has discovered the parasite in an ameba which he has been able to observe in carcinoma in various phases of its existence. Amebas have a definite cycle of development, and among other things, at a certain stage in their development, require an intermediate host, which may be an insect or some low form of vegetable life.

The researches of Schmidt, who, reasoning from analogy, concluded that such an intermediate host must be present, led him to the discovery that a certain form of mould obtained from malignant neoplasms contained bodies corresponding in morphology to amebas in certain stages, which were not present in the same variety of mould obtained from other sources. The mould and the enclosed parasite, under favorable circumstances, could be observed to develop, and in their development went through entirely dissimilar processes.

The inoculation into animals of moulds obtained from new growths led to the formation of malignant neoplasms in a percentage of cases much too high to have been due to coincidence. In all the inoculated animals in which positive results were obtained the growths appeared at the point of inoculation and after a period of incubation which was approximately the same in all instances. In some of the experimental cases the tumors gave rise to metastases, in others they did not; in all cases they were histologically of a malignant type, either carcinomata or the so-called Jensen's tumor.

After the discovery of the parasite Schmidt reasoned that if it were really responsible for malignant neoplasms it should, if inoculated into subjects with such growths, give rise to a reaction similar to that observed after the administration of tuberculin to a patient with tuberculosis. With this idea in view, a number of individuals suffering from inoperable new growths were inoculated subcutaneously with dead cultures of the organism. In nearly all cases the result was a rise in temperature, accompanied in some instances by very marked local reaction. The amount of dead culture injected varied from one-tenth of a milligram to five milligrams, and the injections were always made at a point some distance from the new growth. In at least one instance failure to react led to a diagnosis of a non-malignant disease, the diagnosis being confirmed by operation.

1. Münch. med. Wochft., 1906, liii, 162.

These observations are certainly striking, and the work is along hitherto untraveled lines. Great possibilities are opened up, for, if patients with malignant neoplasms react to injections of Schmidt's organism, it should be possible to cure the disease by the inoculation of the attenuated virus according to the principles laid down by Wright for the treatment of certain bacterial diseases. So far as Schmidt's observations on human beings are concerned, we think it can fairly be said that as yet a sufficient number of tests have not been made. We must acknowledge the suggestiveness of the work, however, and hope that it will soon be substantiated.

HEART BLOCK AND THE STOKES-ADAMS SYNDROME.

The cause of the heart beat, and the path which is taken by impulses passing from the auricles to the ventricles, has been a matter of controversy for years. The physiologists have practically always been divided into two camps regarding the matter, one group insisting that the transmission of the heart impulse takes place through the nervous system, the other that it occurs by means of muscular tissue. Until within two or three years the former group seemed to have a little the best of the argument, but the discovery by His, Jr., in 1903, that there existed a muscular band which connected the auricles with the ventricles put an entirely new face on the matter. This bundle, which is now quite generally spoken of as the bundle of His, is, in man, a narrow band 18 millimeters long, 2.5 millimeters wide, and 1.5 millimeters thick. The bundle runs posteriorly in the septum of the ventricles, from which it passes into the musculature of the right auricle and its valves.

The experimental demonstration that the bundle transmits the impulses from the auricles to the ventricles has been made by His, Humblet, and more recently by Erlanger,[1] whose interesting experiments should be read by all students of heart disease. Without going into detail regarding the methods of experimentation, it may be stated that by varying degrees of compression of the bundle of His all stages of heart block, i. e., interruption of the transmission of impulses from the auricles to the ventricles, may be obtained. Slight compression results merely in an increase in the intersystolic pause; more marked compression produces intermittency in the ventricular contractions, and complete compression causes the auricular and ventricular contractions to occur independently of one another. The experiments also showed that, while the accelerator cardiac nerves are not influenced by heart block, the vagi lose their control over the ventricles.

The bearing which these observations have on certain forms of heart disease, and especially on the so-called Stokes-Adams syndrome, can not be overestimated. It will be remembered that the cardinal symptoms of this condition are bradycardia, in which the auricles may be definitely shown to beat more rapidly than the ventricles, and apoplectiform or epileptiform attacks. As Erlanger states, all the cardinal symptoms of Stokes-Adams disease may be explained by the effects of heart block. The relation of heart block to slow pulse and disparity of action between the auricles and ventricles has already been made clear in discussing the experimental work. The epileptiform attacks are explicable as the result of anemia of the brain, and are doubtless similar to those seen after hemorrhage in warm-blooded animals. The apoplectiform attacks are probably due to venous congestion of the brain, which has long been known to be associated with slow respiration, paralysis of the glottis, and spasmodic symptoms.

A glance at the autopsy protocols of the published reports of cases of Stokes-Adams disease shows at once that, so far, no one pathologic condition has been found as a cause. It is also apparent that in some cases lesions are described which could easily exert pressure on the bundle of His—tumors of the septum, for example. Naturally, up to the present time, there has not been any opportunity to examine this bundle in any large number of cases. We believe that a case of Stokes-Adams disease has recently been reported by Stengel, in which definite disease of the auriculo-ventricular bundle was present, and there is little doubt that similar reports will soon be forthcoming. Some points which have been developed in the treatment of this affection, on purely empirical grounds, are interestingly made clear by the experimental work, especially the disadvantages of digitalis in this affection, and the good results sometimes following the use of iodids. The latter may be partly explained on the ground that the disease of the bundle of His is sometimes syphilitic. Erlanger suggests that atropin, by steadying the pulse, will also be of value in this condition.

1. The Journal of Exp. Med., 1906, vol. viii, 8.

OUR DUTY REGARDING "PATENT-MEDICINE" LEGISLATION.

A large majority of "patent medicines" are injurious to the health of the public and the cause of many deaths. We believe this is the opinion of every physician, except the few who are biased by commercial relations. There is not a practicing physician who is not conversant with the deadly nature of some "patent medicines" and who, from his own individual experience, can not bear witness to cases in which harm has resulted from their use. It seems strange, therefore, that our profession is not earnestly supporting the movement for controlling the sale of these preparations.

We have emphasized the fact that it is neither wise nor necessary to oppose "patent medicines" *per se*, and few physicians do so. But there can be no argument against the need of legislation for the protection of the public against fraud in "patent medicines," and especially against those containing such poisons as cocain, opium or its alkaloids, chloral and acetanilid. And yet

the experience this year in several states emphasizes the fact that physicians are taking practically no interest in the legislation that is being attempted,

In South Carolina they had a very fair bill before the Legislature, but it was killed simply because those who were working for it—as a rule, laymen—were unorganized. The opposition, on the other hand, was well organized by the Proprietary Association of America, and this association was especially in a position to control many of the druggists, as it also partially "controlled" the newspapers with the famous "red clause." According to the *Journal of the South Carolina Medical Association*, a delegation of druggists visited the capitol to work against the measure, because "if it were passed it would be simply a diversion of the revenue of the traffic into the pockets of dealers in other states, and not a restriction of the sales with protection to the public as was contemplated, and that such a diversion would be not only unjust, but very injurious, to our own drug sellers." But while the druggists were being used to oppose the measure, physicians were inactive. Referring to this fact, the above journal says: "We are able to comprehend, even if we do not sympathize with, the action of the druggists, but we neither understand nor excuse the indifference of physicians to a measure which concerns one of the most important planks in our platform."

The druggists seem to have been organized in South Carolina, as they are in other states, by the Proprietary Association, evidently through the N. A. R. D., but we do not believe that a majority of the druggists are opposed to a law regulating "patent medicines." Most certainly many of those who are opposing such legislation do so at the instigation of the "patent medicine" manufacturers and could easily be won over if physicians would but appeal to them. "We believe," says the *Journal of the South Carolina Medical Association*, "that their best interests will be served by working in association with physicians and not in opposition. Pharmacists and physicians should be closest friends, as they are mutually dependent and their aims and ideals should be in harmony. However commercial their recent action may indicate them to be, we believe that if we could get together the result would be a better understanding and a higher conception of the duty which they, as well as we, owe the public."

The journal urges the physicians of South Carolina to give the matter thought and, when the occasion presents itself again, to assist in obtaining the legislation which they know is needed in the interest of public health.

In Iowa a bill is before the Legislature, modeled after the North Dakota law. It is a very conservative bill, and was introduced by Dr. Young, a member of the Senate. The profession of Iowa seems to be as unconcerned in the matter as are the physicians of South Carolina. A correspondent, who has been in touch with what has been going on in the Iowa Legislature, tells us that at the meeting of the committee on February 16 to consider the bill four different representatives of the "patent medicine" manufacturers appeared before the committee, but that no physicians were present, except those who were members of the Legislature. We are informed that the proprietary men did not make a very good impression on the committee, and felt that there was not much response to their talk, which was largely an attack on the *Ladies' Home Journal* and *Collier's Weekly*. But they were not long in putting their machinery into effect in Iowa, as they did in South Carolina and in other states, with the result that druggists from all parts of the state wrote to the members of the Legislature asking them to oppose the bill, and, of course, such efforts are having their effect. The newspapers responded, too, but not as they did in Wisconsin and in Massachusetts last year. Even one medical member of the House is reported to have weakened when he received several letters from druggists in his district. Those favoring the measure expected some help from the medical profession in Iowa, but, from all reports, received practically none.

From Mississippi comes almost the same story. A bill, also modeled on the North Dakota law, was introduced by Representative Lockwood, not himself a physician. Several medical societies passed resolutions approving the bill, but the members of these societies, having passed the resolutions, evidently considered that they had done their full duty as men and physicians. A correspondent who was on the ground writes:

"Physicians used no influence in favor of the bill, except to pass resolutions indorsing it; they advanced no arguments; they wrote no letters to the committee or to members of the legislature. So much for sins of omission. While the physicians of Mississippi were attending strictly to their private affairs and forgetting the interests of public health the Proprietary Association of America was busy. It sent men up from New Orleans to Jackson to lobby; it manipulated the 'red-clause' press (though a number of independent weeklies through the state came out squarely for the bill); it distributed literature. Antikamnia sent a special agent to the spot. (Observe how this 'ethical' proprietary shows its true colors when quackery and fraud are threatened.) The retail druggists were stirred up to write to the Legislature, and protests poured in on the committee having the bill in charge. This committee is largely made up of physicians. Mr. Lockwood looked, with some confidence, to a favorable report. He made an error of estimate.

"Now come the sins of commission. The arguments of the proprietary interests and the plaints of the retail druggists were more potent with the physicians of the Committee on Public Health than principle, the honor of their profession or the public health which they were supposed to conserve. The bill was killed in committee, and the four physicians on the committee are said to have voted to kill the bill."

We hope that the physicians referred to voted to kill the bill because it was not satisfactory, and not because

they were opposed to the regulation of the patent medicine business. We understand that another bill is in course of preparation and will be introduced immediately. We sincerely hope that the physicians on the committee will at least vote in favor of letting it come out into the open, in which case it is likely to pass, because public sentiment is in favor of the proposed legislation. It certainly will if physicians do their full duty.

The fight against fraud in "patent medicines" is on in Maryland, Mississippi, New York, New Jersey, South Carolina, Virginia, Iowa, Ohio, Kentucky and in some other states. In each of these states, we believe, the state society has a committee on legislation. It is the duty of that committee to take the lead in the movement; if there is no committee, then it is the duty of the president of the state association to see that the medical profession in his state is at least given an opportunity to act. If those fail to act who have been appointed or elected to represent and lead the profession in movements in which it is interested, then little successful work may be expected, unless some unusually public-spirited member comes forward and takes the lead.

Our profession claims to act on altruistic motives; here is an opportunity for its members to demonstrate its altruism by work. The movement against the "Great American Fraud" is being made by non-medical men; should we not support them? Is it not our duty to do this? Can we do less than help in this propaganda against the unrestricted greed of those nostrum manufacturers who are not only swindling the people, but undermining their health and who even sacrifice human life to satisfy their greed? The facts recorded on page 666 of this issue concerning one nostrum alone should be sufficient to arouse every physician to appreciate what his duty is.

THE BOSTON SESSION OF THE AMERICAN MEDICAL ASSOCIATION.

The Boston session of the American Medical Association will be the largest ever held. There is no doubt of it. It will be forty-one years since the Association met in New England, and the historical attractions will, of themselves, be sufficient to draw many to the meeting. The members of the profession from New York—city and state—will go as they have never gone before. From the south, the southwest and the extreme west there are more inquiries about railroad rates, accommodations at Boston, etc., than in any other year. New England itself is also being heard from in a way to show that it will be unusually well represented at the session. The officers of nearly all the sections report filled programs unusually early and more evidence of interest in scientific work. While the passenger associations have not acted definitely, those in authority have given assurances that half rates will prevail, with the extension of time to those who want to extend their visit in New England. It is hoped that provisions will be made to accommodate those who want to go by one route—say by the lakes—and return by another. Many foreigners have already accepted invitations to attend, among them Professor Trendelenburg, Leipzig, Germany; Mr. Reginald Harrison, London, Eng.; Professor von Rosthorn, Heidelberg, Germany; Professor Dührssen, Berlin, Germany, and Professor von Frey, Würzburg, Germany. Hence we repeat: The Boston session of the American Medical Association will be the largest ever held—and the Boston people know it and are acting accordingly. Committees have been working for months making preparations, and they promise good accommodations and a thoroughly interesting and profitable time to all who attend.

THE PHILIPPINE JOURNAL OF SCIENCE.

We are glad to welcome into the journalistic field such a fine periodical as the *Philippine Journal of Science*, the first issue of which has just made its appearance. This journal takes the place of the bulletins formerly issued by the Bureau of Government Laboratories of the Philippine Islands. The periodical is to contain original articles by members of the bureau staff, as well as by others who are doing scientific work in the Philippine Islands and adjacent countries of the Orient. The journal will thus have the unique function of presenting the united scientific results achieved in contiguous countries in the tropics. With the growing interest which is being taken in tropical medicine, it seems certain that a publication of this character will secure a large number of readers. The present issue contains articles on "The Water Relations of the Cocoanut Palm," by E. B. Copeland; "The Cocoanut and Its Relation to the Production of Cocoanut Oil," by H. S. Walker; "The Occurrence of Schistosoma Japonicum vel Cattoi in the Philippine Islands," by P. G. Woolley, and "A Study of Some Tropical Ulcerations of the Skin with Reference to Their Etiology," by R. W. Strong. The last is illustrated profusely by excellent photomicrographs of histologic sections of the skin. The mechanical work of the journal is excellent. It is announced that the journal will be issued in approximately ten numbers a year.

THE PURE-FOOD BILL.

Rather contrary to expectations, the Heyburn Pure Food Bill passed the Senate February 21 with only four dissenting votes. The constitutional objections to the bill, raised by Senator Spooner, seem rather far fetched and we think he is only making excuses for his opposition. The standard for food and drinks is purity, or at least safety, and a plain statement on the package of what its contents consists; and these ought to be a sufficiently definite standard and certainly within the spirit of the best good for the public. The bill has now to go before the House, and it is openly charged by press correspondents that a number of votes were given to the bill with the understanding that it would not be disposed of by the House at this session. The friends of pure food must prevent the realization of this ex-

pectation. If the senators were amenable to public opinion, members of the House are still more so; they must reckon with their constituents more directly, and it will be strange if the policy of delay thus suggested can be successfully carried out. There is all the more need, however, that we should not slacken in our efforts to insure the passage of the bill. The whiskey and "patent medicine" interests and the innumerable army of adulterators of all kinds will not be idle. All the influences that have been at work heretofore will now be more active than ever to prevent the passage of the bill or to emasculate it by amendments. Only half the battle has been won, and we may lose all if we allow ourselves to be lulled into a false security by this success. It will not be much trouble or expense for each physician to write to his congressman, asking him to support the pure food bill; just a sentence or two will be sufficient. And if half the physicians of the United States would do this, it would go a long way toward getting a national pure food bill.

AN OBJECT LESSON IN PURE FOOD.

A New York chemist is reported to have treated some of his friends to what he called a "synthetic dinner," each article of food being an artificial substitute for the real thing. It is not stated how well these materials tasted, but it is rather significantly said that after the dinner the chemist's friends joined the ranks of the "pure fooders." As the Chicago *Tribune* aptly remarks, it was an object lesson showing "what kind of meals many of the people of the United States might expect in a few years to be sitting down to three times a day, in the absence of legislation for their protection."

Medical News

ILLINOIS.

Smallpox.—Smallpox in dangerous form is epidemic in Carroll County. Twenty cases are reported in Lanark and 2 in Milledgeville. All lodge meetings and public gatherings have been prohibited in Lanark and the schools have been closed. ——The 2 cases of varioloid reported in Lincoln have been rigidly quarantined and no new cases have appeared.

Personal.—Dr. R. S. Frisbie, assistant superintendent of the Asylum for Feeble-Minded, Lincoln, has resigned.——Dr. J. L. Allegen, Rockford, was assaulted February 14 by William Gleason, whose horse became frightened at Dr. Allegen's automobile.——Dr. F. O. Jackman, Bloomington, is suffering with septicemia.——Dr. S. P. S. Edwards, Moline, has been elected secretary of the Tri-City Sanitarium.

Chicago.

Personal.—Dr. Palmer Findley has accepted the chair of gynecology in the College of Medicine of the University of Nebraska, Omaha, and will remove to that city in the spring.

Decision Against Medical Society.—Judge McEwen of the Superior Court has rendered a decision against the Chicago Medical Society in its efforts to maintain in Grant Park a bowlder placed there in memory of Dr. Charles Guthrie and his pioneer work on chloroform.

Personal.—Dr. Charles Adams has returned from a trip to Mexico.——Dr. Nicholas Senn has been selected to deliver the oration on surgery at the International Medical Congress, Lisbon.——Dr. Frank Billings is taking a yachting trip in the Caribbean.——Dr. Willoughby Walling is visiting in New Orleans.——Dr. S. Jakubowski has had his name changed by decree of court to S. Jackson.

Public Health Condition.—For the week ended February 24 decreases are shown in death rates of all diseases excepting typhoid fever, which remains the same as for the previous week. The deaths of the week numbered 594, equivalent to an annual death rate of 15.10 per 1,000. Pneumonia caused 108 deaths; consumption, 52; nephritis, 49; violence, including suicide, 44; heart diseases, 44; nervous diseases and cancer, each 31, and acute intestinal diseases, 30.

INDIANA.

Smallpox.—It is reported that 20 cases of smallpox have developed in Michigan City since February 25.

Damages Against Hospital.—Mrs. Lillie M. Grimes, Summitville, was awarded $2,500 damages against the Marion Hospital Company, January 27, for injuries sustained June 16, 1904, by falling from a second-story window of the hospital.

Physician Acquitted.—Dr. William H. Dings, Mitchell, charged with having performed an illegal operation on Carrie Shaw, Sept. 8, 1904, from the effects of which she died, was acquitted in the Circuit Court, February 21.

Do Not Wish Notoriety.—At the regular meeting of the Fort Wayne Medical Society, the medical society of Allen County, February 20, a resolution was adopted that a scrap book be kept by the secretary of the society in which is to be preserved all articles appearing in the daily papers, in which the names of members of the society are mentioned in connection with cases.

Licenses Revoked.—The State Board of Medical Registration and examination has revoked the following licenses: "Dr." Louisa Wessell, Fort Wayne, and "Dr." Nelson D. Ross, Muncie.——"Dr." George Snider, a "magnetic healer" of Richmond, has been ordered by the state board to discontinue the practice of medicine under penalty of being arrested and prosecuted for violation of the state law.

Pathologic and Bacteriologic Laboratory.—Indiana University, Bloomington, announces the opening of its new laboratory of pathology and bacteriology in which courses are offered in medical bacteriology, pathologic anatomy and pathologic physiology, and which offers gratuitous service to the physicians of the state in all lines of laboratory diagnosis falling within its province, such as examination of sputum, pus, genitourinary discharges, the tests for diphtheria, meningitis, malaria, typhoid fever, examination of autopsy material, uterine scrapings, etc.

January Disease and Death.—Bronchitis and tonsillitis were the most prevalent diseases; pneumonia stood fourth and scarlet fever fifth; in Allen County an epidemic of smallpox with 52 cases was reported. In all but 27 counties of the state typhoid fever was prevalent. The deaths of the month numbered 2,998, or 411 fewer than in January, 1905. The annual death rate for cities was 16.5 per 1,000, and for the country 11.5 per 1,000. Of the decedents 405 were less than one year of age and 794 had attained or exceeded the age of 65. Consumption caused 419 deaths; pneumonia, 415; violence, 122; cancer, 113; influenza, 45; cerebrospinal meningitis, 38; typhoid fever, 35, and diphtheria, 32.

Personal.—Dr. Allison Maxwell, Indianapolis, has resigned as emeritus professor of the practice of medicine in the Indiana Medical College, the school of medicine of Purdue University.——Dr. T. Victor Keene, Indianapolis, was seriously burned while working in the State Laboratory, February 9.——Dr. Thomas W. Moorehead has been elected president, and Dr. Myron A. Boor, secretary, of the Terre Haute Board of Health.——Dr. George T. MacCoy, Columbus, has been appointed a member of the State Board of Health, vice Dr. Charles M. Eisenbeiss, Elkhart, resigned. Dr. Eisenbeiss has been appointed postmaster of Elkhart.——Dr. Martin Hassenmiller, West Baden, has returned from Europe.——Dr. B. Frank Chambers, Lyons, has been appointed surgeon for the Vincennes Division of the Vandalia Road.——Dr. and Mrs. Ernest S. Baker, Lafayette, have left for California.

KANSAS.

Adds School for Nurses.—At the last meeting of the board of trustees of the University of Kansas it was decided to establish a school of training for nurses in the Kansas University Medical School, Rosedale.

School at Epileptic Hospital.—A school has recently been opened for the patients at the State Hospital for Epileptics, Parsons; 25 children are at present in attendance. Manual training will be given a prominent place in the school work.

Personal.—Dr. Alfred F. Yohe, Leavenworth, has been appointed physician at the federal penitentiary, vice Dr. F. Meigs

Thomas, resigned.——Dr. J. L. Everhardy, Leavenworth, has been appointed county health officer of Leavenworth County, and Dr. William R. Van Tuyl, Leavenworth, county physician.——Dr. E. W. Reed, Holton, has been appointed physician of Jackson County, vice Dr. Joseph C. Shaw, term expired. ——Dr. William C. Bower, Lebanon, has been appointed local surgeon for the Rock Island Railway System.

Hospital Notes.—Arrangements have practically been completed for the purchase of the Stewart Hospital, Hutchinson, by twelve physicians of the city, who will place the institution under the charge of the Dominican Sisters of Mercy. The officers of the institution are: Dr. Clemens Klippel, president; Dr. James E. Stewart, vice-president; Dr. J. E. Foltz, secretary, and Dr. Richard A. Stewart, treasurer.——At the annual meeting of the board of directors of the Wichita Hospital it was announced that the hospital is practically self-supporting, the deficit for 1905 having been only $77.27.—— The directors of the Sabetha Hospital Company have decided to increase the capital stock to $50,000 in order to build a large brick addition to the present building, which is overcrowded. ——The Sisters of Charity expect to build a hospital in Leavenworth at an expense of not less than $50,000.

LOUISIANA.

One Case of Yellow Fever.—On January 28 one case of yellow fever was reported from Kenner, Jefferson Parish, by Dr. Gustave M. Corput of the U. S. Public Health and Marine-Hospital Service.

Sanitarium Fire.—The Fenwick Sanitarium, Abbeville, was burned to the ground February 6, but all the patients were removed in safety. The loss is estimated at $40,000, three-fourths of which is covered by insurance. The institution will be rebuilt.

Lepers' Home Purchased.—After long negotiations the Indian Camp property in Iberville Parish has been purchased by the state for the lepers' home. The land comprises about 358 acres, and on this four twelve-room cottages will be erected, each containing ten bedrooms.

The New State Board of Health.—The new State Board of Health reorganized January 8 with the following officers and members: President, Dr. Clifford H. Irion, New Orleans; vice-president, Dr. W. Glendower Owen, White Castle; secretary, W. S. Ingram, New Orleans, and members, Drs. George W. Gaines, Tallulah; Allen J. Perkins, Lake Charles; T. Edgar Schumpert, Shreveport; James M. Batchelor, New Orleans, and William G. Armstrong, New Orleans. The central office of the board will continue to be at 204 Carondelet Street, New Orleans.

Personal.—Dr. Clifford H. Irion, Benton, recently appointed president of the State Board of Health, has moved to New Orleans, and Dr. R. A. Gullage of Gilliam has purchased Dr. Irion's practice.——Dr. J. Wofford Sanders has resigned as a member of the board of health of New Iberia, and Dr. William J. Emmer has been appointed his sucessor.——Dr. Charles M. Menville, Houma, has been appointed coroner of Terrebonne Parish, vice Dr. Claiborne A. Duval, deceased.——At the annual meeting of the board of administrators of the Charity Hospital, New Orleans, February 5, all the officers of the board and of the hospital without exception were re-elected.

MARYLAND.

Building Fund for Hospital.—The directors of the Union Hospital of Cecil County are making efforts to raise $5,000 additional and expect to commence building during the summer at Elkton. Committees have been appointed on plans and site.

Baltimore.

Deaths.—There were 51 deaths from pneumonia and 34 from consumption for the week ended February 24.

Anniversary Exercises.—At the John Hopkins thirtieth anniversary exercises, held February 22, Prof. Lewellys F. Barker, Dr. Osler's successor, delivered an address on "The Science of Medicine and Medical Practice." A marble bust of Dr. William Osler was presented to the university by Mr. Daniel C. Gilman, ex-president, on behalf of the admirers of Dr. Osler. It will be placed in McCoy Hall.

Personal.—Dr. George C. Wegefarth has gone to Cuba.—— Dr. John Williamson Palmer, the distinguished poet and author of "Stonewall Jackson's Way," is critically ill.——Drs. James S. Fenton, William S. Love, James D. Iglehart, G. Milton Linthicum, C. Frank Jones, Silas Baldwin, Frederick Caruthers, Patrick F. Martin and Thomas S. Sudler have been appointed coroners for Baltimore.

MASSACHUSETTS.

Must Report Tuberculosis.—Boston physicians have been notified by special circulars that they must report all cases of tuberculosis coming under their observation. It is thought that not more than one-half such cases have been reported in the past.

Westfield Vital Statistics.—The board of health of Westfield reports 203 deaths in 1905, a rate of 14.91 per 1,000. Of these 20 were from pneumonia, 25 from tuberculosis, and 29 from heart disease. There were in the town, during the year, 94 contagious cases: typhoid fever, 49; scarlet fever, 24; diphtheria, 12; measles, 8, and cerebrospinal meningitis, 1.

Appointment Confirmed.—Dr. Walter R. Brinckerhoff has received official notice of his appointment as director of the United States Government Leprosy Research Hospital, to be located in the leper settlement, Molokai, Hawaii. He is to work under Surgeon-General Wyman and will leave Boston soon to take charge of the erection of the necessary buildings.

Allow Expert Fees.—District Attorney John B. Moran has failed to make the Massachusetts committee on public service believe that the medical examiners in Suffolk County shall not be allowed expert fees for testimony given by them in cases arising out of and connected with autopsies or inquests performed or conducted by them in their official capacity as medical examiners.

Use Much Water.—In a legislative hearing in regard to enlarging the water supply of Springfield it was developed that the city now uses 150 gallons per day per capita, while other cities and towns use much less: Chelsea, 113; Quincy, 101; Malden, 60; Pittsfield, 100; Taunton, 46; Leominster, 60; Natick, 40; Haverhill, 60; Newton, 55; Brookline, 90; New Bedford, 76, and Brockton, 35.

Tuberculosis Exhibit.—The state tuberculosis exhibit, the outgrowth of the recent exhibition in Horticultural Hall, has been completed and is to be on exhibition for one week, beginning February 28, at the Franklin school house, Boston, and then one week at the North Bennet Street industrial school. Thence it will go successively to Lynn, Lowell, Worcester, Springfield, North Adams and Fall River. The cost of maintaining it a week is $100 beside hall rent.

MISSOURI.

Hospitals Opened.—St. Luke's Hospital, Kansas City, was opened to receive patients February 19. It is hoped within two years to begin the erection of a hospital to cost $250,000. ——The new St. John's Hospital, Springfield, was opened to the public February 22.

Memorial Meeting.—Memorial services for the late Dr. Elisha Hall Gregory were held February 18 in the Y. M. C. A. building, St. Louis. Dr. George Homan, president of the St. Louis Medical Society of Missouri, presided, and the eighteen past presidents of the society were named as honorary pallbearers. The members of the society attended the funeral services in a body.

Personal.—Dr. John H. Duncan, St. Louis, has gone to Europe.——Dr. and Mrs. C. B. Hewitt, Kansas City, left for Cuba, February 14.——Dr. J. H. Simons, St. Louis, is confined to his house with an infected wound of the foot.——Dr. C. R. Woodson, St. Joseph, has been decided not guilty of contempt of court "since he disclaims any purpose of intention of contempt."——Dr. William F. Meyer, St. Louis, has been exonerated, as the coroner has decided that in killing his brother Dr. Meyer acted in self-defense.

NEW YORK.

Osteopaths Fined.—C. E. Rumsey, Watkin, and O. C. Clock, Elmira, were each fined $50 for illegal practice of medicine.

Fire in Physician's House.—Fire in the residence of Dr. Andrew J. Dick, Watertown, caused damage of about $600, fully covered by insurance.

Insane Transferred.—One hundred and twenty-five patients have been transferred from the Hudson River State Hospital, Poughkeepsie, to the St. Lawrence State Hospital, Ogdensburg.

Examination for Medical Inspectors.—A civil-service examination was held in Syracuse, February 3, for the position of medical inspector of public schools. There were twenty applicants for the ten positions.

Sentenced to Prison.—Adam Blackborne, a barber of Fairport, charged with practicing medicine without having been legally registered, pleaded guilty and was sentenced to six months in the penitentiary.

Hospital Donations.—The first day of the annual donation to the Rochester City Hospital netted nearly $11,000 for the institution.——By the will of Albert G. Pitkin, New York, $5,000 is bequeathed to the Hospital Association of the City of Schenectady.——Friends of the City Hospital, Watertown, have subscribed $3,200 toward the payment of the debt of $13,000 on the institution.

Associated Physicians Meet.—The Associated Physicians of Long Island held their eighth annual meeting in Brooklyn, January 27, at which the following officers were elected: Dr. Elias H. Bartley, Brooklyn, president; Drs. J. Ensor Hutcheson, Rockville Center; H. Beekman Delatour, Brooklyn, and Arthur H. Terry, Patchogue, vice-presidents; Dr. James C. Hancock, Brooklyn, secretary, and Dr. Charles B. Bacon, Brooklyn, treasurer.

Personal.—Dr. Frederick H. Millener, Buffalo, has been appointed surgeon-in-charge of the nose, throat and ear department of the German Hospital Dispensary.——Dr. Sydney F. Rogers, Cohoes, was injured by being thrown from his buggy in a collision, February 4.——Dr. James C. Sharkey has been appointed health officer of Rensselaer, vice Dr. William L. Allen, retired.——Dr. James E. Medden, Seneca Falls, recently fell while alighting from his buggy and sustained a Colles' fracture.——Dr. George F. Mills has been appointed health commissioner of Oneida.—Dr. George E. Swift has been chosen as health officer of Hudson, vice Dr. Henry W. Johnson, retired.——Dr. John Archibold has assumed the duties of mayor of Cohoes.——Dr. John J. English has resigned as police surgeon of Troy.——Dr. La Salle Archambault, Cohoes, has returned after two years in Europe.——Dr. Frederick W. Parsons, Poughkeepsie, has been appointed second assistant physician of the Hudson River State Hospital, Poughkeepsie, vice Dr. Charles H. Langdon, deceased.——Dr. Clarence E. Carruth has been appointed city physician of Cohoes, vice Dr. Edward M. Bell.——Dr. Martin Cavana, Oneida, has been reappointed surgeon for the New York, Ontario & Western Railroad.——Dr. Edgar H. Douglass, Little Falls, has been appointed surgeon for the Little Falls and Frankfort division of the New York Central Railroad.——Dr. Amos P. Dodge, Oneida, has been reappointed local surgeon of the New York Central Railroad and of the West Shore Railroad.

New York City.

Charter for Postgraduate School.—A limited charter for three years has been granted to the Brooklyn Postgraduate Medical School by the State Board of Regents.

Middleton-Goldsmith Lecture.—The Middleton-Goldsmith lecture of the New York Pathologic Society was given February 23 by Dr. Ludvig Hektoen, Chicago, on "Phagocytosis."

Harvey Society Lecture.—The eleventh lecture in the Harvey Society course will be delivered at the New York Academy of Medicine by Prof. J. Clarence Webster, Chicago, March 3, on "Modern Views Regarding Placentation."

Sued for Alleged Neglect.—Suit has been commenced against Dr. Herman J. Boldt for damages said to have been caused by the defendant allowing "a towel" to remain in the body of the plaintiff for a long period of time after the performance of a laparotomy. The plaintiff claims $25,000 damages. Dr. Boldt says there is no justification for the suit.

Arraigned and Exonerated.—Dr. John A. Burke, who was arrested January 8 on the charge of complicity in an illegal operation on Mrs. Lillian Kropf, was discharged January 29, fully exonerated.——Dr. Carl F. B. Fuchs, Brooklyn, charged with having performed a criminal operation on Mrs. Anna Hoffmann, Ridgewood, was discharged from custody January 29.

Contagious Diseases.—There were reported to the sanitary bureau for the week ended February 17, 1,674 cases of measles, with 37 deaths; 371 cases of diphtheria, with 62 deaths; 328 cases of tuberculosis, with 176 deaths; 198 cases of scarlet fever, with 11 deaths; 100 cases of varicella, with 1 death; 30 cases of cerebrospinal meningitis, with 21 deaths; 30 cases of typhoid fever, with 10 deaths, and 1 case of smallpox; a total of 2,732 cases, with 318 deaths.

Tuberculosis Exhibit Opened.—Between 2,000 and 3,000 persons visited the traveling tuberculosis exhibit of the committee on the prevention of tuberculosis of the Charity Organization Society, which was opened to the public in the Educational Alliance building on February 20. It will remain open until March 10. Dr. Alfred Meyer delivered a lecture. Stereopticon views were shown illustrating how the roofs of tenement houses could be used as sanatoria.

Brooklyn Wants a Health Commissioner.—The Kings County Medical Society has announced itself as in favor of having a health commissioner instead of an assistant sanitary superintendent. The society contends that the health department can not be administered with satisfaction either to the medical profession or the public because of lack of authority and direct responsibility. An appeal has been made to President Coler requesting him to have a bill proposed providing for the appointment of a health commissioner for this borough.

Interne Anesthetists Organized.—The interne anesthetists of the various Brooklyn hospitals have organized a conference to meet at the various hospitals from time to time and listen to papers, reports of cases, etc. The first meeting was held at Long Island College Hospital, December 19, on invitation of Dr. Adolph F. Erdman. After an informal social half-hour Dr. James T. Gwathmey, Manhattan, demonstrated the use of his new vapor inhaler. The January meeting was held at the Bushwick Hospital on invitation of the consulting anesthetist, Dr. Woolsey.

Gifts to Hospitals.—Isaac Guggenheim has given $250,000 to the Sydenham Hospital for the erection of a new building, conditioned on the raising of a sufficient endowment by the hospital directors for the maintenance of the institution.——By the will of the late Margaret H. Jones, St. Luke's Hospital, Presbyterian Hospital and the Postgraduate Hospital will each receive at least $125,000.——Nearly $20,000 has been paid into the treasury of the Beth-Israel Hospital as a nucleus of the fund for the annual Purim ball, to be held March 14 for the benefit of the poor of the East Side.

Bronx Medical Society.—This society was organized two months ago by about forty physicians of Bronx borough. Dr. Alfred F. Brugman was made president of the society. One of the first subjects for discussion was an amendment to the vaccination bill, now before the legislature, releasing from compulsory vaccination the children of parents who have scruples against vaccination. The society adopted a resolution protesting against the passage of any measure which would allow unvaccinated children in the public school and directed that the members of the legislature from the Bronx borough should be informed of this action.

Pasteurized Milk for City's Wards.—All milk and cream bought by the charities department is now pasteurized. The department purchases daily about 3,000 quarts of milk for the 6,000 inmates in the city's charitable institutions, and all the milk is pasteurized before its delivery by the contractor. The contract requires that all the milk shall be raised to a temperature of not less than 155 degrees nor more than 167 degrees F. and shall immediately be cooled to a temperature of 45 degrees F. or less. The process is so simple that there is scarcely an appreciable difference in the cost of the milk. The beneficial effects have been chiefly noted in the improved keeping qualities of the institutional supply.

NORTH CAROLINA.

Personal.—Dr. Charles L. Minor, Asheville, was painfully injured in an automobile accident recently.

Hospital Notes.—Pittman Hospital, Tarboro, is being enlarged.——The physicians of Raleigh are actively working for the establishment of a new general hospital in that city.——Mission Hospital, Asheville, has added a new wing, which was formally opened last month.

Sanatorium Company Chartered.—The Crowell Sanatorium Company opened at Charlotte, January 1. The new company has absorbed the Crowell Sanatorium, Charlotte. The officers of the new company are: Dr. S. M. Crowell, president; Dr. I. W. Faison, vice-president; Dr. W. M. Strong, secretary-treasurer, and resident physician.

Preparation for State Meeting.—The Mecklenburg County Society has taken action regarding arrangements for the annual meeting of the Medical Society of the State of North Carolina, in Charlotte, May 29 to 31. Dr. Robert L. Gibbon was chosen chairman of the committee of arrangements, and Drs. R. J. Brevard, John R. Irwin, W. O. Nesbet and E. P. Russell make up the remainder of the committee. The president of the society, Dr. E. C. Register, was also made a member.

PENNSYLVANIA.

Bequest to College.—By the will of the late John Porterfield, Allegheny, $50,000 is ordered to be paid to the Medical Department of the Western Pennsylvania University, Pittsburg, on the death of the testator's sister.

Entertained Takaki.—The Allegheny County Medical Society entertained Baron Kanehiro Takaki, surgeon general of the

Japanese imperial navy, February 14. A dinner was given at the Hotel Schenley, after which an address was delivered by Baron Takaki, followed by a smoker-reception at the German Club.

Railway Surgeons Meet.—The annual meeting of the Pittsburg & Lake Erie Railway Surgeons' Association was held at Pittsburg, February 15. Dr. John D. Milligan, Pittsburg, was elected president; Dr. Edward M. Hand, Coraopolis, was re-elected secretary, and Drs. Loyal W. Wilson, New Castle, and George W. Gallagher, New Haven, were elected vice-presidents.

Hospital Notes.—St. John's General Hospital, Allegheny, is to be enlarged so that it will accommodate at least 60 more patients, at a cost of more than $25,000.——Forty physicians of Harrisburg have formulated plans for the institution of a private hospital in Harrisburg. Dr. C. A. Rahter was elected chairman, and Dr. C. M. Rickert, secretary, of the organization.

Damages for Physician's Death.—The United States Admiralty Court handed down a verdict of $25,000 in favor of the widow and children of Dr. J. M. B. Ward of Marcus Hook, against the Steamship Company of Copenhagen. Dr. Ward was killed by falling down the hold of the steamer *Euxinia*, Jan. 21, 1903, while in the discharge of his duties as quarantine physician.

Monongahela Valley Medical Society.—At a meeting held in Monessen, January 25, this society was organized. The membership includes physicians from Washington, Fayette and Westmoreland counties. The following officers were elected: Dr. John W. Gordon, Bellevernon, president; Dr. Harry J. Repman, Charleroi, vice-president; Dr. Joseph W. Hunter, Monessen, secretary; Dr. J. C. Enos, Charleroi, corresponding secretary; Dr. Howard R. Day, Monessen, treasurer, and Drs. George E. Nickels, Bellevernon; McKay, Charleroi, and Arthur R. Wilson, Monessen, censors.

Personal.—Dr. George B. Kunkel has been appointed surgeon of the Philadelphia & Reading Railway in Harrisburg. ——Dr. H. E. Zerner has resigned as alderman of New Castle. ——Dr. Isadore J. Weida, Emaus, has been elected president of the board of health, vice Dr. Martin B. Backenstoe, resigned. ——Dr. Ralph W. Montelius, Mount Carmel, has been appointed surgeon for the Philadelphia & Reading Railway between Port Clinton and Williamsport.——Dr. J. Marion Vastine, Catawissa, has been appointed division surgeon for the Philadelphia & Reading Railroad.——Dr. Theodore B. Lashells, Meadville, fell January 31, fracturing his right hip.—Dr. Charles W. Everhart, Royersford, who has been a patient at the Phoenixville Hospital, became violently insane, January 10, and was removed to the State Hospital for the Insane, Norristown.——Dr. Charles D. Schaefer, Allentown, has been unanimously elected acting mayor of that city.——Dr. Jacob Stickel, Williamsport, was recently operated on for a tumor of the left breast.——Dr. Lauran C. Thomas, Latrobe, has been appointed local surgeon for the Pennsylvania Railroad.

Philadelphia.

Gift to Hospital.—At the annual meeting of the Methodist Episcopal Hospital, February 9, it was announced that $2,000 had been subscribed for a new ward.

Diphtheria Closes School.—On account of the discovery of two cases of diphtheria in the Meredith school, February 23, the school was ordered closed and fumigated.

Illegal Practitioner Sentenced.—A woman who advertised as "Dr. Roberts, female specialist," was tried in the Criminal Court, January 30, charged with abortion, was found guilty and sentenced to three years in the Eastern penitentiary.

Medical Inspection.—The reports, made February 23, of medical inspections during January, show that in 315 public schools 6,454 visits were made. Treatment was recommended in 4,483 cases, and 1,561 children were excluded from attendance. Of these 691 were boys and 870 girls. The number of pupils readmitted was 802. Vaccinations were made in 277 instances.

Alumni at Banquet.—The dinner given by the alumni of the University of Pennsylvania Medical School, February 21, was attended by more than 260 persons. The toastmaster was Dr. George E. de Schweinitz. Among the speakers were Provost Harrison on "The University of Pennsylvania"; Dr. George A. Piersol, "The Medical Faculty of the University"; Dr. W. W. Keen, "Sister Medical Schools"; Dr. George Guthrie, "Pennsylvania Alumni"; Dr. John A. Witherspoon, "The Alumni from Afar"; Dr. Daniel M. Hoyt, "The Junior Alumni," and Dr. Sylvester J. Deehan.

Surgeon-General Takaki in Philadelphia.—Surgeon-General Kanekiro Takaki of the Japanese army and navy spent the week of February 19 to 24 in this city. He received the degree of bachelor of science at the "University Day" exercises, February 22. February 23 he addressed the students of the university on "Sanitation in the Army and Navy", and on February 24 he addressed the students of Jefferson Medical College in the amphitheater of the college on "The Medical College Conduct of the Russo-Japanese War", and stated that the Japanese had received their surgery from the teaching of Dr. Gross.

Prevalence of Measles.—The epidemic of measles shows no sign of abatement, according to reports of the bureau of health. Since January 1 there have been 4,921 cases reported, but large as the number is, it does not include all sufferers, for in many instances medical advice is not sought, and in such cases returns are not made to the health authorities. In the six days which ended at noon February 23, there were 649 cases reported, and it is believed that the number for the week will exceed that of any week since the disease became prevalent. In the first week of the present year 353 cases of measles were reported, and the disease has steadily progressed ever since.

Much Typhoid.—The prevalence of typhoid fever has reached the highest mark in about three years. Dr. A. C. Abbott emphasizes the importance of filtration and has compiled the following figures: In the Queen Lane district with unfiltered water there have been during the week 63 cases of typhoid among a population of 293,120 people, or 21 cases to every 100,000 inhabitants. In the Wentz farm reservoir district, which is supplied with unfiltered Delaware water, there have been 87 cases among 176,712 people, or 49 cases for every 100,000 people. In the filtered water district of West Philadelphia, with 42,000 population, there was not one case of typhoid fever. There have been but three cases since January 1. In the Twenty-first and Twenty-second wards, which are supplied with filtered water, and which include 113,000 people, there were but seven cases. The records of the health bureau show that there are 2,300 cases of typhoid under treatment in the city.

Personal.—Drs. Charles Browne and E. J. Porteous left February 23 for an extended tour of the Pacific Coast.——Dr. Rebecca Fleisher, who has been ill for many weeks, has returned to her home in Philadelphia.——Dr. and Mrs. L. Webster Fox have returned after a month spent in Port Antonio, Jamaica.——D.. Richard H. Harte, surgeon to the Pennsylvania Hospital, has been elected a member of the city council. ——Dr. E. G. Whinna, who has been in failing health, has left the city to recuperate.——Dr. Arthur R. Cobb, while in a state of despondency, jumped from the second-story window of a cottage in Cape May, and sustained general contusions and fractures of both arms. He is convalescing in the Hahnemann Hospital.——Dr. Joseph P. Tunis entertained the Biological Club at dinner at his residence, February 23.——Dr. Robert Abbe, New York City, will address the W. W. Keen Surgical Society of Jefferson Medical College in the amphitheater, March 17, at 8 o'clock, and will be given a reception at the Bellevue-Stratford after the address.

GENERAL.

Cholera in Manila.—Dr. Heiser, chief quarantine officer, reports that the cholera situation in Manila remains about the same. A few sporadic cases have occurred in the city, but in almost every instance the infection could be traced to the outside. He states that cholera has practically described an entire circle of a radius of 25 miles around the city of Manila. In view of the very few cases of cholera in Manila and their sporadic character, it was deemed advisable still further to modify the outgoing interisland quarantine which was placed on vessels.

Health Report of the Isthmus for January.—Colonel Gorgas reports that the health of the Isthmus continues excellent. In January there were 22,000 employés on the rolls and the daily sick list was about 503; this gives an average sick rate of 22 per mille. Such loss from sickness, Colonel Gorgas states, compares very favorably with that of any body of men working anywhere. The daily sick rate is an accurate measure of the loss to the commission from illness. It does not necessarily mean a low death rate. During January the number of deaths from pneumonia was large. Among the employés there were 74 deaths, and of those 26 were from pneumonia. Most of these were among negroes. Only one American died from this disease. The report states that surprise has been expressed that there should still be breeding places of mosquitoes on the Isthmus, but calls attention to the fact that when the Americans left Havana after a most successful yellow-fever cam-

paign, the last inspection showed something like 300 breeding places in that city. Mosquito work on the Isthmus has reduced the number of such places to the minimum. There have been no new cases of yellow fever since the last report.

FOREIGN.

Little Plague in Japan.—Acting Assistant Surgeon Fowler of the United States Public Health and Marine-Hospital Service reports that after a cessation of thirteen days a case of plague occurred in Kobe.

Frontier Practice.—A number of physicians residing on either side of the boundary between France and Belgium met recently at Paris to draw up a sati factory code of ethics for their guidance in frontier practice.

Prizes for Milk Supply and Housing of the Lower Classes.—An international exposition of hygiene is to open at Milan in May and to continue through the summer. To celebrate the occasion the king of Italy has offered a prize of $1,000 for the best well-tested arrangement for supplying cities with pure milk. A second prize of $2,000 is also offered for the best type of dwelling house for the masses adapted to the climate of southern Italy.

Proposed Changes in Examinations at University of Edinburgh.—Changes in the medical course at the University of Edinburgh are proposed, to enable students to appear for examination in the earlier subjects of the curriculum at an earlier period than has been the case. This is to give more time for the final subjects. The *Lancet* states that it would still further help if the university court had applied for powers to prevent, when it was thought desirable, students attending classes of an advanced division when they had failed in the subjects of an earlier division. Meanwhile the university has no such power, the result being that the work of classes is sometimes hindered by a number of students attending who are not in a position to benefit by the class and who act as a drag on the others.

Von Noorden in Vienna.—As already mentioned, Carl H. von Noorden, at present in Frankfurt, has accepted the summons to the chair of internal medicine left vacant by the death of Nothnagel at Vienna. The Vienna authorities agreed to all his terms, promising the completion of the new model clinic in two years and the erection of a new laboratory for him, with extensive remodeling of the present clinic at once. He is to bring his assistant with him, and the latter is to have a professorship of medical chemistry created for him. Von Noorden has never been a clinical teacher, and it will be a great change for the specialist in the pathology of the metabolism to attempt to fill the chair of Nothnagel and Skoda, distinguished for their universality and skill as teachers. A Vienna correspondent of the *Deutsche med. Wochft.* refers casually to the danger of von Noorden's making the clinic one for metabolic affections exclusively, but the editors comment that von Noorden's record should banish this fear. He made many friends in this country during his recent visit here to lecture. One of his addresses then on some of the problems of metabolism was published in THE JOURNAL at the time, Oct. 28, 1905, as our readers will remember. He is comparatively a young man, not quite 48.

Announcements by von Behring in Regard to "Immune Milk Supply" in Prevention of Tuberculosis.—On February 8 Professor von Behring lectured at Berlin on this topic before the German Agricultural Council. He announced that he had lately perfected an inexpensive method for producing and keeping the immunizing properties of the tubercle bacilli for injection while at the same time destroying the vitality of the tubercle bacilli. He calls the fluid thus obtained "tuberculase" and expressed hopes that it was destined to prove an effectual aid in the stamping out of tuberculosis among men and animals. He added that he had not been experimenting with tuberculous cattle in a condition even remotely approximating that of a consumptive human being, "and consequently," he continued, "I have no scientific basis for the assumption that tuberculase may prove an effectual remedy for human pulmonary tuberculosis. I did not speak at Paris of a remedy for consumption in the sense of a cure for already established tuberculous destruction of lung tissue. I spoke only of a remedy to prevent consumption in young persons by acting on an already existing tuberculous focus in such a way that its self-healing may proceed with the natural healing powers of the organism, undisturbed by renewed tuberculous infection." He aims to render children immune to tuberculosis by feeding them on milk from cows immunized with tuberculase. The children will then grow up refractory to tuberculous infection.

Pharmacology

Indorsements of Campaign Against Nostrums.

Dr. C. W. Dulles, Philadelphia, writes:

"As one who has followed the career of THE JOURNAL since its birth, I wish to express the gratification with which I have seen it attain a degree of scientific excellence that makes it the equal (*me judice*) of any medical periodical in the world. At the same time, I may express the pleasure it gives me to find it fully enlisted in the cause of intelligence and decency in the application of medicinal agents to the treatment of disease and warring against the credulity of the medical profession and the unscrupulousness of the manufacturers of many proprietary medicines. Having for years, in private and in public, borne testimony against these two disgraces of our time, it is most encouraging to see so strong a champion of the good cause enter the lists. May your efforts be as successful as your object is laudable."

Dr. Victor H. Dye, Sistersville, W. Va., writes:

"At this time I take pleasure in heartily indorsing everything that THE JOURNAL has done and is doing in the crusade against 'patent' and proprietary medicine vendors. It is exactly portraying my sentiments regarding that curse of the American people."

Dr. W. C. Herman, Cincinnati, writes:

"I take great pleasure in sending you my congratulations for the great work THE JOURNAL is doing for the physician and for the laity as well in its exposure of the nostrum evil. This work comes a little bit late, it is true, but 'everything comes to him who waits' good and bad."

Dr. Theodore Zbinden, Toledo, Ohio, writes:

"I wish to express my approval of all the undertakings of the American Medical Association, and wish to say that I am especially pleased with the work of the Council on Pharmacy and Chemistry. I am looking into the matter of patent-medicine advertisements published in some religious journals and hope to accomplish something in that way. Be assured of my hearty co-operation with the officials of the American Medical Association in all their good work."

At the regular meeting of the Muscogee County (Ga.) Medical Association, February 7, the society unanimously indorsed the resolutions adopted by the Suffolk District Section of the Massachusetts Medical Society, approving the action of the American Medical Association in establishing the Council on Pharmacy and Chemistry, and commending the educational campaign now being conducted by *Collier's Weekly* and the *Ladies' Home Journal* in exposing the business methods of the Proprietary Association of America.

Similar resolutions were adopted by the Androscoggin County (Maine) Medical Association, the Logan County (Ohio) Medical Society, the Delaware County (Ohio) Medical Society, the Utica (N. Y.) Medical Library Association, the Champaign County (Ill.) Medical Society, the Fayette County (Ky.) Medical Society, the Lenawee County (Mich.) Medical Society, the Chattanooga and Hamilton County (Tenn.) Medical Society and the Calhoun County (Ala.) Medical Society. Each member of the last named society was also requested to write a personal letter of commendation to the editors of THE JOURNAL of the American Medical Association, the *Ladies' Home Journal* and *Collier's Weekly*.

A Physician's Experience with Acetanilid.

The physicians of Racine, Wis., recently gave a banquet for the members of a medical society in an adjoining town. The afternoon preceding the banquet one of the visiting physicians took several powders of acetanilid and caffein, and immediately before the banquet—about 9 p. m.—he took one or two more. In all he took about 18 grains of acetanilid. As the banquet progressed he gradually became cyanotic, but seemed normal otherwise until collapse occurred. The heart action was very weak, and there were nausea, vomiting, diarrhea, and intense cyanosis. He was at once put to bed in the hotel in which the banquet was held, and several physicians worked over him all night. Powerful stimulants were applied, but he was not con-

sidered out of danger till the next morning; and even then there was still some cyanosis. He was not able to go home till after thirty-six hours had elapsed.

Poisoning from Electric Headache Powders: Recovery.

Dr. A. P. Merrill, Pittsfield, Mass., reports January 23, that he was called to see a woman about 27 years old. She was suffering with considerable pain in the stomach and said she "felt cold and numb all over," and was listless and could hardly be roused to answer questions. She had had a bad irregular, and for over an hour the radial pulse could not be felt. He decided that she was suffering from acetanilid poisoning and treated her accordingly, giving stimulants and applying external heat. The woman was ill for a number of days, and for forty-eight hours she could hardly keep awake. During that time the extremities were cold and more or less numb. Her digestion was much upset, and Dr. Merrill states that she reached normal only after three weeks or more. The powders taken by this patient were labeled "Electric Headache Powders" and were bought at a local drug store.

THE SLAUGHTER OF THE INNOCENTS.

Kopp's Baby's Friend.

In THE JOURNAL, Nov. 25, 1905, page 1678, there appeared a letter from an Omaha physician reporting the death of a child following administration of four drops of Kopp's Baby's Friend.

In the same issue we published the report of an analysis of this preparation. According to this analysis, Kopp's Baby's Friend contains in 100 c.c., 0.0719 gm. morphin sulphate; approximately one-third of a grain in one fluid ounce.

On January 6, 1906, page 54, we noted a report of the death, in Baltimore, of a child aged three and one-half months following administration of this preparation. As will be remembered, in reporting this case we quoted from a published statement of the state's attorney, in which he emphasized the "urgent need of a law prohibiting the sale of any patent or proprietary medicine containing any deadly drug unless the same is labeled 'Poison'"

On Feb. 10, 1906, page 447, we printed a letter from the physician who reported the first-mentioned case, notifying us of a case of poisoning from the use of this "remedy."

We have now to record two other deaths which, it is alleged, have followed the administration of Kopp's Baby's Friend. In Utica, N. Y., twin children, a boy and a girl, aged five weeks, were given the preparation in the evening; the boy is said to have been given four drops and the girl two. In the morning each were given another dose. Both children died that day, the boy at 2:30, the girl at 7:45 p. m.

"The said Adam and Eve Gnad, otherwise known as Zarlah, died on the 25th day of January, 1906; the boy died at 2:30 p. m. and the girl died at 7:45 p. m. at No. 25 Kossuth Avenue, in the City of Utica, County of Oneida, N. Y., of morphin poisoning. The evidence shows that Stanislaus Gnad, the father of the infants, had administered to them a dose of a mixture, which is known as 'Kopp's Baby's Friend,' on the night of January 24, 1906, and that the infants (whose age was one month and one day) died on the following day. Now after investigating the circumstances attending such deaths and obtaining the report of Drs. James G. Hunt and H. F. Preston, who made an autopsy on the bodies of the deceased infants and also the report of Drs. Nelson and Smith, chemists, who made an examination of the stomachs and stomachs' contents of the dead infants, and also an examination of a portion of the mixture above mentioned, showing that it contained morphin, I find and decide that the said Adam and Eve Gnad, otherwise called Zarlah, died from an overdose of 'Kopp's Baby's Friend' which was administered by their father, but without criminal intent."

Thus without any particular effort on our part there has come to our attention within three months evidence of four deaths and one case of poisoning from this "soothing" medicine for infants. The question is, how many cases have occurred to which our attention has not been called, or which have not been reported? Is it possible that we have accidentally heard of all of all such cases? Is it not more likely that there are hundreds that are never even reported to the coroner? Of course, it would be wrong to check this kind of business by legislation; vested interests are at stake, especially vested interests of newspapers. Kopp's Baby's Friend is only a sample; it is no worse than hundreds of others that are allowed to be sold for the aggrandizement of the few, but to the injury and death of the many.

MRS. J. A. KOPP.
SOLE PROPRIETOR OF
KOPP'S BABY'S FRIEND,
The King of Baby Soothers.
OFFICE AND LABORATORY, 318 & 320 E. Poplar St. (Near Pine)
ALSO SOLE PROPRIETOR OF
KOPP'S CUR-A-COUGH. KOPP'S ELECTRIC WORM SYRUP.
KOPP'S LIVER PELLETS. KOPP'S ATLAS LINIMENT.
C. ROBERT KOPP, Manager and Manufacturing Chemist.

York, Pa., Dec. 21, 1905.

City Clerk,

Knoxville, Tenn.

Dear Sir:

Would you for a compensation furnish me with a monthly report of the births occurring in your city? What I desire is the fathers' names and addresses. In case of illegitimates, the mothers'. I have made arrangements with the City Clerk in many cities for the furnishing of this report and would like very much to have that of your city.

Kindly let me hear from you and oblige

Yours very truly,

CED MRS. J. A. KOPP.

[It is purely a coincidence that we are able to reproduce the above letter at such an appropriate time. It was sent by Dr. Cochrane, secretary of the Board of Health of Knoxville, and was received by us February 24, in the same mail that brought a certified copy of the coroner's verdict on the Utica poisoning cases.]

headache for three days and on that evening had taken a headache powder, and as she felt worse after it she took another in twenty minutes, as the directions were to repeat if necessary. In about fifteen minutes after taking the second powder she felt numb, cold, very tired and sleepy, and had difficulty in speaking. There was absolutely no feeling in the extremities for over two hours. Dr. Merrill says that when he saw her, about thirty-five minutes after she had taken the second powder, she had considerable pain in the stomach, the pupils were unevenly dilated, the heart action was very weak and

Poisoning from Mrs. Winslow's Soothing Syrup.

Dr. G. M. Cummins, Hamilton, Ohio, reports a case of poisoning from Mrs. Winslow's Soothing Syrup, which occurred in his practice.

Oct. 24, 1905, he was called to see a male twin child, aged 3½ months, suffering from cholera infantum. He ordered a restricted diet and prescribed as follows:

R.	Bismuthi subnitratis	gr. xii	75
	Pepsini (pure)	gr. xl	2 60
	Aquæ q. s. ad	℥iss	45

Sig.: Shake and give 1 teaspoonful every hour.

At 12 o'clock that night he was called and told the baby could not be aroused, that it had been sleeping for an hour or more and had almost stopped breathing. A neighbor had suggested giving the child a dose of Mrs. Winslow's Soothing Syrup and it had been given two doses of ne-half teaspoonful each, one-half hour apart. On examination Dr. Cummins found the pupils contracted to the size of a pinhead, pulse very slow and respirations four a minute. He diagnosed opium poisoning. Dr. Cook was called in consultation, and after four hours' work they succeeded in bringing the patient around all right. Dr. Cummins states that he has no doubt that this was a case of opium poisoning from the morphin contained in the soothing syrup.

Chamberlain's Colic Remedy Satisfactory to a Morphin Habitue.

A correspondent sends us a newspaper containing the following item:

Judge Smith sentenced Miss Ella Clark of the city (Mason City), to Mt. Pleasant asylum to-day (Jan. 29, 1906). She was proven to be addicted to the use of morphin to the extent that her health has been undermined and she is now almost a physical wreck and is confined to her bed. In her desire for the drug she brought large quantities of Chamberlain's colic remedy, which it is said she has been using for years.

Probilin.

NEW YORK, Feb. 21, 1906.

To the Editor:—The article on "The Pharmacopeia and the Physician" in THE JOURNAL, February 10, contains, under the caption, "Laxative Sweet Substances," a reference to and a footnote on probilin. We beg leave to state that probilin is not a "laxative sweet substance"; the phenolphthalein it contains is merely an adjuvant.

The note makes no mention of the fact that probilin is primarily a biliary disinfectant, the salicylic acid it contains being excreted by the epithelia of the biliary passages. Among many others, Dr. Kuhn (*Zeitschr. f. kl. Med.*, vol. lxiii) reports in detail extensive experiments which show that salicylic acid is the best biliary disinfectant.

The assertion that salicylic acid and acid sodium oleate are the most powerful cholagogues is perfectly "in accord with the generally accepted opinion of therapeutists." Thus Professor Stiller (*Wien. med. Woch.*, 1, 1905) writes that according to Mandelstamm's researches salicylic acid is the most powerful cholagogue. While the bile salts produce a thick bile, salicylic acid causes an abundant, thin secretion, which is deficient in solid constituents and is well adapted to disintegrate and mobilize biliary calculi. Professor Rosenheim (*Deut. Med. Woch.*, Oct. 2, 1905) reports similarly. Sir James Barr (*British Medical Journal*, Jan. 20, 1906, p. 126) refers to the cholagogue action of the salicylates. Professor Ewald (see translation in *Brooklyn Med. Jour.*, Oct., 1905) says that after acute attacks of inflammation or colic, cholagogue remedies are indicated, and he prefers bile salts, acid sodium oleate, sodium salicylate, etc.

Probilin is "difficult to prepare" because acid sodium oleate is an oily substance, disagreeable to handle, and it would give the pharmacist much trouble to incorporate it properly into a pill with the other ingredients. Certainly the constitution of the pills would vary if the pharmacists were to prepare them, and they would be more expensive. Besides, acid sodium oleate is not kept in stock by druggists, being a special preparation of sodium oleate used by the manufacturers.

We are, of course, in heartiest sympathy with THE JOURNAL'S work for ethical and scientific therapeutics, and hence regret all the more the derogatory remarks made on probilin, which are doubtless due to an insufficient acquaintance with the remedy. SCHERING & GLATZ.

[The contention that one of its ingredients is rarely found in stock and that it is disagreeable to handle is in part true, but we repeat that probilin can be prepared by any competent American pharmacist. We admit, however, that an article like probilin is more likely to be satisfactory if prepared by a reliable and well-equipped manufacturing pharmaceutical house, such as Schering & Glatz represent, than by the average pharmacist.—ED.]

Correspondence

Interstate Reciprocity.

CHICAGO, Feb. 24, 1906.

To the Editor:—In reply to the criticisms of my article on "Interstate Reciprocity," by Dr. B. D. Harison, secretary of the Michigan State Board of Registration in Medicine, I beg leave to submit the following:

I desire at the outset to state that my article incorporated an educational plan which I proposed as a feasible working scheme and for which neither the Illinois State Board of Health nor the Council on Medical Education of the American Medical Association, with which I have the honor to be connected, are to be held responsible, as the article represents simply my own personal views. I desire to thank Dr. Harison for calling attention to the words "medical boards" in the sixth paragraph and for the substitution of the word "societies" therefor.

I regret very much that Dr. Harison seems to have utterly failed to grasp the fundamental ideas which I tried to convey, namely, that the American Medical Association is desirous of assisting the examining boards, and that the plan proposed is not simply a scheme of reciprocity, but a proposed plan of education which, if successfully carried out, will serve as a rational foundation on which reciprocity will naturally rest.

I attempted to anticipate and prevent any criticism of this kind by stating explicitly, at the outset, that "everything relating to the whole subject of medical education belongs to the state." And, again, "The examining and licensing board in each state is the only body authorized to determine the conditions or terms under which physicians are licensed in the state." In order to emphasize still further the fact that the authority of the state is supreme, after outlining the plan of a standard curriculum, in the preparation of which I distinctly state that the leading educators "and members of the examining boards are to unite," I again say, "To establish reciprocity it is only necessary for the states to adopt the standards of the Council on Medical Education." Under the circumstances I see no occasion for the use of such expressions as "usurpation of the authority of the state." Does this look like usurpation of power or authority? Does this imply any intention on the part of the council to assume any of the prerogatives of any of the boards? Does this carry the implication that the medical boards are not "capable of fulfilling the duties and responsibilities with which they are charged by the state"? Does this bear out his accusation that the committee "is entering the field entirely without the range of the committee's power and status"?

Dr. Harison accuses me of "having omitted in his statement of facts a large percentage of the most material facts connected with and necessary to the success of interstate reciprocity," and yet he adds only two more, namely, the statement that no one school of practice has the authority to settle the question of reciprocity, and that all proper and effective medical laws have been enacted by the co-operation of the several legalized schools of practice. These two statements are true, but wholly irrelevant as far as the present discussion is concerned. We are, therefore, driven to the conclusion either that Dr. Harison thinks these two points the "most material" in solving the problem, or else that he knows what the most material facts are but fails to state them. Dr. Harison again says: "It is impossible for Dr. Webster, or, for that matter, any one else, or any association of persons except a state legislature, to confer on the Council of Medical Education of the American Medical Association, of which he is secretary, the authority which he truly states is solely vested in state boards." Once more I must protest that this, although true, is irrelevant. The council does not seek this authority, has no use for it, has not asked for it, has not assumed it and has not hinted that it intends so to do.

Dr. Harison again says: "These medical boards are capable of fulfilling the duties and responsibilities with which they are charged by the state, and do not require unauthorized persons or associations to measure their authority or to perform their legal duties." This is very gratifying information, notwithstanding its insinuations. What the "capabilities" of the various examining boards are I do not pretend to say. It is my

humble opinion, however, that the boards are not all dominated by men who have given as much serious thought to this subject as has Dr. Harison, and they have not all done such good work. I am further of the opinion that these boards have not done all they should or could have done and that there are many problems yet unsolved; there is yet much want of harmony of thought and action and purpose; there are too many men going around with chips on their shoulders, fearing some one is going to "usurp" something and afraid of honest, fearless discussion, jealous of every plan not suggested by themselves. If the profession is wholly satisfied with the "capabilities" of the various boards, why all this discontent in the ranks?

Dr. Harison "diffidently" begs leave to inform me that some four years ago a confederation of state medical boards was founded, and that "this confederation has succeeded in establishing practical reciprocity with some twenty-one states, including Dr. Webster's own state, Illinois. It has also adopted an itemized standard of preliminary and medical education, which standard has also been adopted and is now being enforced by the Association of American Medical Colleges."

I beg leave to inform Dr. Harison, without any diffidence whatever, that the National Confederation of State Medical Licensing Boards was founded about ten years earlier than the American Confederation; that the former was the first organization of its kind in the United States to adopt a standard curriculum; that said standard was adopted at New Orleans, May 4, 1903, and modified and again adopted at Atlantic City, June, 1904; that it was proposed by myself, as chairman of the committee on curriculum, that it was modified the next year by me, and that it was substantially this standard curriculum which was adopted without any important modification by the Association of American Medical Colleges, April 10, 1905, and by the American Confederation, April 27, 1905.

In this connection I beg leave to quote a part of a personal letter from Dr. G. M. Kober, of Washington, D. C., chairman of curriculum committee of Association of American Medical Colleges, dated May 15, 1905, referring to the value of a standard curricula and their adoption by American Confederation and by the Association of American Medical Colleges, in which he says: "In this connection I desire to place myself on record in saying that whatever has been accomplished in this direction during the past year is entirely due to the splendid work which you have performed in this field for over five years, and no one at all familiar with your painstaking tabulations and reports can fail to appreciate the magnitude and immense value of your work, without which my own labors and those of the committee of the Association of American Medical Colleges would have been impossible."

The credit of having first adopted a standard curriculum does not belong to the American Confederation, but to the National Confederation. If these organizations, including Dr. Harison's confederation, were so ready to adopt a standard uniform curriculum—more or less arbitrary and imperfect though it was, constructed by myself alone, without any legislative authority, without any co-operation of the schools—how much more likely will they and the colleges and examining boards be to adopt a standard if constructed in accordance with the proposed plan?

I beg leave further to inform Dr. Harison that the Illinois State Board of Health was the first in the Union to offer to reciprocate, and that its first reciprocity resolution was passed Oct. 10, 1899, and it was reciprocating before the American Confederation was born.

His "seventh" in regard to the three schools of practice, and "that no one school, however preponderating (?) its membership, has the authority to settle such a vital question as reciprocity," is true, but irrelevant. If I even remotely suggested such a thing, I am still unaware of the fact. In my plan for a committee on entrance requirements and on standard curriculum it is proposed that the state examining boards be represented, and there is not one word which, even by implication, excludes any school of practice from serving on such committees.

But suppose the committees are made up wholly from the regular school. Let us inquire in what important respects the education of a homeopath or eclectic differs from a regular. All three attend seven years at the grammar school; all three attend the same high school for four years, pursuing the same studies; all three obtain an arts degree after three or four years of study; all three attend medical colleges in which twenty out of the twenty-three subjects in the curriculum are studied from the same textbooks. In eighteen or nineteen years of study and preparation, a paltry few hundred hours of instruction in materia medica and therapeutics, in which the teaching differs. Would not such eclectics and homeopaths be willing to adopt such a general educational plan if its value, fairness and desirability were demonstrated to them, even though they had no part in its creation? Must one take an active part in the writing of the Bible before he can subscribe to its teaching?

I wish to say, in conclusion, that there is no desire or intention on the part of the Council on Medical Education of the American Medical Association to usurp any of the functions or prerogatives or powers of the examining boards. There is, however, a strong desire to assist these boards and organizations in improving and elevating the standards of entrance requirements and of medical education in every way possible, and to promote harmony and secure intelligent co-operation, and, coupled with this, the confident expectation that interstate reciprocity will follow naturally and legitimately. GEORGE W. WEBSTER,

Organization in Oregon—Further Discussion.

PORTLAND, ORE., Feb. 10, 1906.

To the Editor:—Obedient to the call of its president, the City and County Medical Society of Portland, Ore., convened Jan. 3, 1906, to take action on a letter written by Dr. McCormack to THE JOURNAL of the American Medical Association under the caption, "Oregon Practically an Unorganized State," and also on an editorial which appeared in the same issue of THE JOURNAL based on the letter in question.

The meeting of the society was the largest and most representative in its history, and the discussion which took place was general and of the most animated character. The consensus of thought at the meeting was unanimous and the opinion prevailed that Dr. McCormack by his letter to THE JOURNAL and THE JOURNAL by its editorial did grievous wrong to the profession of Oregon and to its organized societies by publishing the aforesaid letter and editorial and circulating them broadcast, to the detriment of the fair name and credit of the profession of the State of Oregon—a profession, forsooth, which demonstrated beyond all question and cavil its title to being united and well organized, by giving to the American Medical Association one of the most successful sessions that it has ever held.

It is recalled that Dr. McCormack delivered an address to the City and County Medical Society on "Organization," and that at no part of his discourse was there even as much as a hint dropped that his mind harbored such painful impressions concerning the profession of the state and the evils which were corroding and corrupting it. On the contrary, his words carried with them warmth and comfort and made every one feel that he himself felt that his work of organization in the state was satisfactory and sufficient.

Dr. McCormack is reminded that in the discussion which followed his excellent and most interesting address at the meeting referred to there was a very frank avowal of those minor dissensions and differences which exist in all societies, but which found no deeper root in the Portland Society and the profession at large of the State of Oregon than elsewhere, and which were nothing more than surface manifestations of antagonisms which are normal in the modern, strenuous, competitive life.

The City and County Medical Society of Portland, for itself and for the profession of the State of Oregon, resents the charges made in Dr. McCormack's letter and in the editorial columns of THE JOURNAL of the American Medical Association, and characterizes them as unjust and unwarranted.

The society resents and denies the charge that a factional spirit exists obnoxiously in the society that is responsible for the demoralization of the profession throughout the state, and on behalf of its own membership denies the charge that it is divided by factions and that factional spirit is so rife that the society consumes its energies in its internal discords, thereby

nullifying useful effort and hindering all progress, and in answer thereto affirms that the record will show to the unprejudiced investigator that the society has not fallen far short from fulfilling its duties and obligations to the public, to the society and to the profession in all the varied relations that interact between them.

The society resents the charge and denies the truth of the allegation that the most influential members of the profession are outside of the society, and in answer thereto it states that the best elements of the profession are within the society; that the society is actuated by a broad and liberal spirit and has always evinced a readiness and willingness to welcome within its ranks all reputable professional men and women, that it has blackballed none but those who were proved unworthy of being enrolled in its membership on account of flagrant acts of unprofessional conduct.

On behalf of the regular practitioners of the State of Oregon the society resents and characterizes the statement as misleading, mischievous and false that "the average grade of the profession is low and the spirit non-progressive," and in answer thereto respectfully affirms that the great majority (fully 80 per cent.) of the professional men in the State of Oregon now in active practice are graduates of medical schools in excellent standing from the eastern and southern states and from the middle west, and that the charge carries with it a reflection on these schools and the imputation that their graduates and alumni are not worthy or well qualified, and in further answer thereto it is affirmed that it is the progressive spirit which prompts men in all stations in life and all callings to go far afield for their chosen spheres of work—that the spirit of the west stands for progress and forever proclaims enterprise.

In behalf of the district and county societies of Oregon, which have not escaped Dr. McCormack's denunciation, the Portland Society avers at this time nothing, inasmuch as Dr. McCormack has so recently visited them, and is, therefore, presumably the better qualified to judge. But in defense of those pioneers of the profession who are striving, under great disadvantages, with limited facilities for communication, to set afoot the intricate and difficult work of organization, it reserves the right to challenge the wisdom of administering a word of rebuke where a timely word of encouragement was most needed.

In defense of the medical schools of the State of Oregon, which are charged with imparting an indifferent standard of medical education, the society has carefully noted Dr. Josephi's letter to THE JOURNAL of the American Medical Association in its issue of Jan. 13, 1906, and, approving its tenor and spirit, commends it to all those who desire to learn the truth regarding the status of medical education in the State of Oregon, and in this connection the society begs leave to say that Dr. J sephi, who has been the dean of the faculty of the Medical Department of the Oregon State University for nearly twenty years, has devoted his best thought and efforts in furtherance of higher standards, and in the prosecution of his work he has enjoyed the undivided support of his colleagues in the faculty, most of whom, being graduates of the best eastern schools, with subsequent European training, are, therefore, pledged to the principle of higher education, and the same may be said regarding the Medical Department of the Willamette University at Salem.

The society has not at its disposal at this time a transcript of the records of the State Board of Medical Examiners, but it believes that the board is striving earnestly to fulfill its functions and to execute the law. The society believes that in its own defense the State Board of Medical Examiners can refute the charges preferred against it by Dr. McCormack that its low standards of requirements have made the State of Oregon the dumping ground for low-grade men who have failed to pass their examinations in neighboring or even distant states. The law is admitted to be defective, but it was the best that could be enacted at the time, and it marked a great forward step, which the society believes will soon be followed by another and greater.

In answer to the charge that the professional fees in the State of Oregon are based on a low standard, the question can be easily solved by reference to the City and County Medical Society fee schedule, which will convince the most skeptical that, while the schedule may be low in spots, the average is higher—infinitely higher—than the average fees in eastern states and the middle west, and will compare very closely with the higher schedules of California and Washington.

The society, acknowledging no disposition on its part to defend the baseness of those who confessed to Dr. McCormack a willingness to debauch their profession and to reduce it with all its glorious traditions to the level of a paltry trade, admits the existence of such evils as Dr. McCormack refers to as "commercialism, division of fees, lodge and other forms of contract practice and kindred evils," but it makes an emphatic denial to the charges that these evils are more pronounced and widespread in the State of Oregon than elsewhere, and Dr. McCormack is respectfully informed that these evils were unheard of and unknown in the State of Oregon until a few short years ago; that the origin of this epidemic or pandemic disorder has been traced to the east and south and middle west; that it has crept slowly to the west, where it has found only limited and partial lodgment, and, furthermore, that the devotees of this nefarious traffic are now known, marked and doomed to the obliquity that awaits them.

Finally, the City and County Medical Society of Portland, for the profession which it represents and for itself, confessing frankly its shortcomings and imperfections and admitting the existence of faults and flaws in its organization, for which at all times it respectfully solicits the aid and co-operation of the parent organization and the wise councils of its accredited representatives, always, however, in respectful form and with due regard to the amenities of polite life, exercises at this time its right to challenge both Dr. McCormack, who is counted an accredited representative of the American Medical Association, and THE JOURNAL of the American Medical Association to establish proofs of the charges and allegation, all of which are herein and hereby categorically denied.

Always mindful of the splendid service that THE JOURNAL of the American Medical Association has rendered and is rendering the medical profession, and its courteous recognition of the efforts of the profession of Oregon at the last session of the American Medical Association, and mindful, also, of the conspicuous service which Dr. McCormack has rendered the profession as missionary in the work of organization and in the interest of higher standards, both in ethics and practice, we remain, for the City and County Medical Society of Portland,

HENRY WALDO COE,
President City and County Medical Society.
GEORGE F. WILSON,
President Oregon State Medical Society.
WALTER E. CAREL,
Ex-President Oregon State Board of Medical Examiners.
KENNETH A. J. MACKENZIE,
Second Vice-President American Medical Association.

P. S.—On account of the unavoidable absence of members of the committee from the state, the transmission of the letter was delayed for a considerable time.

DR. M'CORMACK'S COMMENTS.

To the Editor:—Reading between the lines of the committee's communication, as was the case with Dr. Josephi's letter as to educational matters, there is such constant admission of the discord, commercialism and other evils indicated by me that, but for the repeated declaration that what I had said was "misleading, mischievous and false," and the reiterated challenge that both THE JOURNAL and myself "make good" in the matter, any further comment from me would be unnecessary. As it is, I take up the matter again very reluctantly, embarrassed by the abundance of the corroborative testimony which has come to my hands without seeking, by the seeming harshness of some of the expressions quoted, for which I am not responsible, and still more by the fear of again being misunderstood by leaders so long oversensitive with each other that the most kindly expressed and best intended criticisms were made a new occasion of discord, instead of promoting harmony.

I have before me the published proceedings of the meeting at which this committee was appointed. It was held to consider my report, but the factions went so far afield in protracted and angry crimination and recrimination over matters almost en-

tirely foreign to it as to keep the presiding officer busy preserving order and make what I said of discord seem mild. The profession of Oregon has seen the account of these proceedings, as a number of copies were sent me from out in the state, and it could serve no useful purpose for others to know more of them. The committee says it was an animated meeting, and it certainly was. On the subject of discord between the leaders of the profession, I also quote from a letter of Dr. Walter Brown, Cloverdale, Ore., in the current number of the *Medical Sentinel* (Dr. Coe's journal):

> "I will relate an incident in my own experience. About two years ago a fairly intelligent, well-to-do stockman consulted me. His case was so plainly and unmistakably a surgical one that I advised him to go to Portland and have an operation performed. I mentioned three surgeons and told him to consult any or all of them. Instead of remaining in Portland six or eight weeks, as he should have done, he returned in ten or twelve days. He anticipated my surprise and said: 'Doctor, those surgeons in Portland are a pack of snapping, snarling coyotes. I called on Dr. No. 1, who treated me courteously and told me what would have to be done, etc. I next called on Dr. No. 2, and he treated me very politely, but when I told him what Dr. No. 1 had said about my case, I saw he did not like it a bit. Dr. No. 3 was even worse. When I went back to Dr. No. 1 and told him what Drs. Nos. 2 and 3 had said about my case, he grew furious. So I decided about all they cared for was the size of the wad they could get out of me and each was afraid the other would get it, and I said to myself they could go to h—l. I went to see that Chinese doctor. He treated me for a while, and I felt so much better that he told me I could come home, and he would treat me by mail.' It is barely possible that you can imagine my chagrin and mortification at this recital. But I will add that this man had to make a business trip to the home of the city of the A. M. A. JOURNAL and while there had an operation performed."[1]

In regard to the administration of the medical law, I submit the following letter from one who reports an actual experience:

> "———— ORE., Jan. 6, 1906.
>
> "Dr. J. N. McCormack, Bowling Green, Ky.
>
> "*Dear Doctor:*—From the enclosed clipping (Portland *Oregonian*) you will see that your missionary work in our state has already done some good, and I wish to congratulate you for telling the truth so well. Your criticism of the State Board of Medical Examiners was especially timely, for I believe that no poorer board ever existed, and the standard of the profession can never be raised until a new board is formed.
>
> "When I took the examination for my license some four years ago, it was ludicrously easy, and yet every man, with the exception of Dr. Clouchek—an Ann Arbor graduate—and myself, cribbed very openly, in plain view of the examiner in charge. The common method was to copy the examination directly from books which they had either on the desks or on their laps, but a few had been industrious enough to prepare 'ponies'. In the anatomy examination, when one old fellow couldn't find what he wanted in the book, Dr. ———— very kindly wrote out the answer and said, 'That's the way I want it answered,' and then winked very broadly at me as he handed it to him. The evening after Dr. ———— examinations, we met him as we were coming out of the Marquam Theater, and Dr. Clouchek asked him why he didn't try to stop the cribbing which was so flagrant and disgusting. He replied that the board had decided that any man who was bright enough to crib was bright enough to pass any examination they might give him.
>
> "After some hesitation I joined the local branch of the State Medical Society some two years ago. . . . Were it not compulsory to belong to it in order to remain in good standing in the American Medical Association I would certainly withdraw from the same. . . .
>
> "Trusting that I have served to help convince you that the criticisms you made were justified, and that the state needs a new board of examiners, I am,
>
> "Yours very truly, "———— ————."

To show that was not an isolated example, I quote again from Dr. Brown's letter in Dr. Coe's journal:

> "At the time of my examination I saw applicants consulting notes and books pretty freely in making out their papers; however, that has nothing to do with the grade of the examination or the examiner, but it was the faulty method of holding the examination."

Similar support could be given for every other material statement made by me if necessary. In this connection it may be proper for me to say that I did not make the acquaintance or receive a word of information from any physician in Portland who was not a member of the City and County Society, and that I have used no letters or information since not furnished by the members of that organization or the State Society. That my purposes were not so generally misunderstood, even in Portland, except by those who are such important factors in the conditions criticised, I quote the following from one of the most prominent of the younger physicians, a kind of letter which might be multiplied indefinitely from out in the state:

> "PORTLAND, ORE., Dec. 16, 1905.
>
> "*My Dear Doctor:*—I wish to commend you on your article in THE JOURNAL of December 9, and I hope, representing as I do the younger profession, that the influence of your recent visit and your just and timely criticism of our organization will soon bear fruit. The profession has been coming closer and closer together the last few years, and you have given this coalescence a marked impetus.
>
> "I hope you can come to Oregon again; I hope you will make definite plans to do so, because in just such sections your influence on those who are stubborn, and encouragement to those who are striving, is just what is needed."

And at a later date the following from the same gentleman:

> "I am sorry that many of the members of the society to which I belong have taken the wrong view of your communication to THE JOURNAL on the Oregon organization, and I hope the committee, which was appointed to reply to you, will 'cool off' a little, and consider the spirit in which you wrote the communication, and the motives which prompted you in doing so.
>
> "The wording of your criticism was taken very literally, and very much to heart, but it is one of those misunderstandings which will be adjusted in the course of time, and soothed down by the cooling balm of sober second thought.
>
> "With the compliments of the season, I am,
>
> "Very truly yours,
>
> "———— ————."

If space permits, Mr. Editor, I will join in the request[2] that my article and the correspondence with Dr. Josephi be reproduced as an introduction to the report of the committee, that the whole subject may be considered together, and especially that the kind and conciliatory spirit which has actuated me from the beginning may be extended to the enforced introduction of matter here which might otherwise seem harsh.

In conclusion, this visit to the Pacific Coast had long been in contemplation and had no connection with the session of the Association in Portland. While a representative of that body, I alone am responsible for my conclusions and for their publication, and if there seems anything ungracious on the part of the Association, or in the editorial comments of THE JOURNAL, which were based on what had been reported by me, I ask that the entire responsibility be laid at my door. It was all said in a spirit of kindness, which no misunderstanding there can either pervert or alter. Such factionalism and rivalry as exists in Portland, estranging, as it does, the families and friends of these excellent, worthy men, is not normal, healthful or universal, as the committee, from long familiarity with such conditions, insists and believes, and is no less hurtful to every interest of both the profession and people because it continues in some other equally unfortunate localities. If these gentlemen would only be as kind and generous with each other in their every-day relations as they are to visitors, these conditions would soon be ancient history, as they should be. No one

[1. The current number of the *Medical Sentinel* states that all three of these physicians have since left the state.—ED.]

[2. It is our opinion that no good will be accomplished by taking the space to reproduce the communications referred to. Those who are anxious to read them will find the communications in THE JOURNAL, Dec. 9, 1905, pp. 1804 and 1818.—ED.]

would be more benefited by such hearty, cordial co-operation than these leaders and surgeons, and lesser benefits would soon extend to every other physician, and especially to the younger element in the profession, and I again urge that it be tried, confident, from long experience and observation, that it will do all that is promised. J. N. McCORMACK.

Medical Forgeries—the Hagen Burger Case.

DENVER, Feb. 19, 1906.

To the Editor:—Dr. J. C. Connell's letter in THE JOURNAL, February 17, contains certain misleading statements relative to the now famous Hagen Burger case that I can not allow to go without correction. By reference to my article on "Medical Forgeries" in THE JOURNAL, February 3, it will be seen that in the second paragraph of his letter he has misquoted the sentence relative to the power of revocation vested in the Colorado licensing board. He has changed the past tense of the verb *to have* to the present.

In criticising the board's failure to convict Hagen Burger of the criminal charge still pending against him, as compared with the inability, thus far, of the Queen's University senate to revoke the diploma which they know was secured on fraudulent representation, Dr. Connell fails to take into consideration the greater difficulty one encounters in securing a conviction on a criminal charge than in prosecuting a civil suit. Furthermore, under the old Colorado statute extradition was impossible, and he should not criticise us for failure to convict a fugitive from justice.

I am not aware of apologizing for allowing Hagen Burger to escape conviction of the charge still pending in Colorado, nor is there anything in my article threatening to "place certain disabilities on all Queen's College graduates coming to Colorado." The Colorado board and the plan of medical licensure are too broad in their treatment of applicants for license to resort to anything so small. No qualified graduate of Queen's University need fear mistreatment at our hands.

The following from my article with reference to the action of the senate does not sound like criticising Queen's University for not "immediately canceling the degree granted to Hagen Burger":

> "Their senate is now conducting an investigation of the case, in which those of their faculty in charge of matriculation and examination of candidates for graduation were most ingloriously duped, and to do other than to revoke the diploma granted Hagen Burger by their college would gain that institution a most unenviable reputation with the medical boards throughout the world."

Why will not Dr. Connell frankly admit that the faculty was duped by the oleaginous Teuton, and proceed as vigorously as the Canadian law will permit to revoke his diploma obtained by securing advanced standing through fraud? A trip to Europe is not necessary to prove it. S. D. VAN METER,
Secretary-Treasurer Colorado State Board of Medical Examiners.

Pauper Fees by Wealthy Corporations.

BEDFORD, IND., Feb. 19, 1906.

To the Editor:—I inclose a schedule of fees of the Maryland Casualty Company, Baltimore. The Maryland Casualty Company is sending this schedule to all physicians who act for them, and possibly some physicians will sign the schedule without considering that it means just about one-half of the former fees. I wrote the company that it would be impossible for me to sign it. For such a company, in its present prosperous condition, to ask us to accept such inadequate fees is simply preposterous. The idea of a surgeon accepting $3 for amputating a finger or $15 for trephining! If the profession will stand together it will be much better off. C. H. EMERY.

[The schedule of fees, which has been referred to by several correspondents, asks surgeons to make visits where minor surgical operations are required, such as contused, incised or lacerated wounds, for $1. This amount is paid also for the removal of foreign bodies from the eye.

Three dollars for the amputation of fingers, for reduction of fractures of the hands or feet, or for dislocation of the bones of the hands or feet, or for ligating an artery below the knee or elbow.

The generous fee allowed for dislocation of the shoulder, elbow, wrist, ankle or jaw, or for treating fractures of the scapula, fibula, clavicle, ribs, arm, forearm or jaw, is $5.

For fracture of the femur, tibia or patella, $10.

The liberal allowance of $15 is made for trephining the skull, removing the eye, reducing a dislocation of the hip joint or amputating the forearm, or for the excision of the larger joints except the hip joint.

The company becomes extremely generous toward the end and gives $25 for amputation of the hip or shoulder joint, or excision of the hip joint, or for amputation of the thigh or of the leg.

Then, if more than one patient is treated in the same locality and at the same visit, the above charge is allowed for one, but for all over one only one-half is allowed. Further, if the person injured has received more than one injury the surgeon is paid for treating the most serious injury only, and so on.

We agree with our correspondent that if the profession will stand together they will not be insulted with such contemptible offers as those made by the Maryland Casualty Company of Baltimore.—ED.]

Quinin in Pneumonia.

ALBUQUERQUE, N. M., Feb. 19, 1906.

To the Editor:—I have read with great interest the article "Pneumonia" appearing in THE JOURNAL, Feb. 10, 1906, by Dr. W. J. Galbraith. Why Dr. Galbraith should claim originality in this course of treatment, however, I fail to see. Dr. A. J. Giesy, attending physician to the Good Samaritan Hospital, Portland, Ore., pursued the course of treatment, to my knowledge, in 1894, and how much earlier I do not know, and as house physician to the Good Samaritan Hospital at that time I have repeatedly administered, by Dr. Giesy's directions, from 30 to 50 grains of quinin at the initial dose and have pursued a like course at different times during the subsequent twelve years. I do not, by any means, think that this measure should be put forth as a matter of routine, but many patients in the first stage of pneumonia are doubtless greatly benefited, and it may abort a case—if one's judgment of such an event is to be accepted. J. B. CUTTER, M.D.,
Surgeon in Charge, Santa Fé Coast-Line Hospital.

Marriages

HENRY W. HERYFORD, M.D., Anderson, Cal., to Mrs. C. E. Corbin of Springfield, Mo.

HARRY J. BRUGGE, M.D., to Miss Mary Elizabeth Morrison, both of Chicago, February 7.

P. H. WILLIAMS, M.D., to Miss Sibyl Stafford, both of Paintsville, Ky., February 12.

E. D. JACKSON, M.D., Newcastle, Pa., to Miss Sue Anderson of La Rue, Ohio, February 16.

ROBERT N. CUMMINGS, M.D., Emmett, Idaho, to Miss Harriet Reynolds of Boston, February 19.

DANIEL A. STINE, M.D., to Miss Florence Rebecca Harris, both of Philadelphia, February 14.

WILLIAM WHITALL REQUARDT, M.D., to Miss Chesley Chenton, both of Baltimore, February 10.

MARTIN M. GROVE, M.D., Dell Rapids, S.D., to Miss Grace Fiske, at Plainview, Minn., January 1.

CHARLES R. DANCER, M.D., Fort Wayne, Ind., to Miss Catherine Rusk of Waveland, Ind., February 19.

EDWARD W. WEBER, M.D., White Plains, N. Y., to Miss Eleanor Jackson of Ottawa, Ont., February 7.

CLEMENT ELLIS CONGER, M.D., Cross Keys, Va., to Miss Hallie Ramsey, at Alexandria, Va., February 21.

J. GEMMILL CHICHESTER, M.D., Redfield, S. D., to Miss Frances Reeves Mettler of Chicago, February 24.

FRANCIS A. SUTORIUS, M.D., Denver, Colo., to Miss Adelaide N. Shell of New York City, at Burlington, Iowa, February 14.

HARRY C. MARXMILLER, M.D., Newport, Ky., to Miss Ednah Tinker Gruwell of Los Angeles, Cal., at Bluffton, Ind., February 22.

Deaths

Thomas Ross, M.D. McGill University Medical Department, Montreal, 1863; a member of the American Medical Association; ex-president, secretary and assistant secretary of the Medical Society of the State of California; president of the Sacramento Society for Medical Improvement; a member and for eight years president of the Sacramento board of health; physician to the Southern Pacific Railroad Hospital; in 1878 county physician of Yolo County, and for a long time secretary of the Woodland board of health, died at his home in Sacramento, February 11, from cerebral hemorrhage, after an illness of three weeks, aged 65.

Thomas J. Bergen, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1859; surgeon of the First Pennsylvania Infantry during the Civil War; for more than twenty years a member of the staff of St. Elizabeth's Hospital, Utica, and a member of the active or consulting staff of the Utica General Hospital since its foundation; a member of the board of charities and later of the board of town auditors of Utica; a member of the Oneida County Medical Society, died at his home in Utica from heart disease, February 15, after an illness of three months, aged 72.

William Wilson Torrence, M.D. Rush Medical College, Chicago, 1880; a member of the American Medical Association, Illinois State Medical Society and Black Hills Medical Society; honorary member of the North Central Illinois Medical Association; member of the American Association for the Advancement of Science; formerly a well-known physician of Deadwood, S. D., and prior to that time a missionary of the Presbyterian board in Teheran, Persia, and physician to the Shah, died at St. Joseph's Hospital, Denver, February 13, after a long illness, aged 50.

Wesley Davis, M.D. Harvard University Medical School, Boston, 1866; a member of the American Medical Association for many years; a veteran of the Civil War; councilor of the Massachusetts Medical Society; a member of the visiting staff and for a long time a trustee and president of the board of trustees of the Worcester City Hospital; one of the oldest practitioners of Worcester, died at his home in that city from cerebral hemorrhage, after an illness of two weeks, aged 65.

Thomas Kelley, M.D. Rush Medical College, Chicago, 1871; a veteran of the Civil War; for thirty-five years a physician of the Santa Clara Valley, Cal.; for one term county physician, and once president of the Santa Clara County Medical Society; from 1899 to 1904 postmaster of San José, Cal., died at his home in that city, February 14, from fatty degeneration of the heart, after a long illness, aged 69.

Thomas Chappell Cook, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1859; health physician of Colorado County, Texas, for several years; assistant surgeon of the First Texas Heavy Artillery, C. S. A., during the Civil War; a member of the state legislature in 1885 and 1886, died at his home in Weimar, Texas, February 19, from nephritis, after a long illness, aged 69.

James B. Sherry, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1868; a veteran of the Civil War; for several terms medical director of the Department of Massachusetts, G. A. R.; a member of the Fusilier Veteran Association and of the Ancient and Honorable Artillery Company, died at his home in Boston, February 21, from heart disease, aged 62.

George W. Stone, M.D. Bellevue Hospital Medical College, New York City, 1876; a member of the American Medical Association, and one of the most highly esteemed practitioners of Lapeer County, Mich.; for more than twenty years a member of the school board, died at his home in Metamora, Mich., February 13, from heart disease, after an illness of a year, aged 60.

William Valentine McKenzie, M.D. College of Physicians and Surgeons in the city of New York, 1884; a member and president of the Middlesex County (N. J.) Medical Society, and president of the board of education and a member of the board of health of Metuchen, died at his home in that city, February 13, after an illness of four months, aged 44.

Alfred Martin Vollmer, M.D. American Medical Missionary College, Chicago, 1902; a member of the American Medical Association; for two years a practitioner in Apia, Samoa, and vice consul-general of the United States at that point, died at his home in Milton, Wis., February 15, from pulmonary tuberculosis, after an illness of several months, aged 30.

David Fawdrey, M.D. College of Physicians and Surgeons in the City of New York, 1864; the oldest practitioner of Watertown, N. Y.; a medical cadet in the Army, and later a surgeon in the United States Navy during the Civil War, died in Watertown while making a professional call, February 13, from cerebral hemorrhage, aged 68.

Francis E. North, M.D. College of Physicians and Surgeons, Chicago, of Taylorville, Ill., a member of the Illinois State Medical Society and Christian County Medical Society, died at the Missouri Baptist Sanitarium, St. Louis, February 20, from intestinal obstruction, eight days after an operation for appendicitis, aged 27.

William E. Mattison, M.D. College of Physicians and Surgeons in the City of New York, 1852; surgeon of the Third New Jersey Volunteer Infantry during the Civil War; for many years justice of the peace of North Plainfield, N. J., died at his home in that city, February 11, from heart disease, aged 82.

Warren P. Blake, M.D. Dartmouth Medical School, Hanover, N. H., 1884; a member of the Springfield Medical Club, Hampden District Medical Society and Massachusetts Medical Society, died at his home in Springfield, Mass., February 15, from disease of the liver, after an illness of two months, aged 47.

William Barber, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1865; one of the oldest practitioners of Waverly, Iowa; once coroner of Bremer County; a surgeon during the Civil War, died in Waverly, from heart disease, February 10, after a short illness, aged 75.

A. Henry Butts, M.D. Medical College of Virginia, Richmond, 1858, a surgeon in the Confederate service during the Civil War and until a few months ago a practitioner of Greenville, Monroe County, W. Va., died at his home in Charleston, W. Va., February 7, from pneumonia, aged 72.

William H. Murphy, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1899; a famous Yale athlete and coach; athletic instructor in the United States Naval Academy, Annapolis, Md., died in Westboro, Mass., February 14, aged 35.

John H. Cochran, M.D. New York University, New York City, 1867, of The Plains, Va.; a veteran of the Civil War; representative of Fauquier and Loudon counties in the Virginia legislature, died in Richmond, February 24, from cerebral hemorrhage, aged 63.

James M. Rix, M.D. Bellevue Hospital Medical College, New York City, 1868, a Civil War veteran, some-time member of the school board of Warner, N. H., died at his home in that place, February 16, from cholelithiasis, after an illness of a year, aged 72.

Andrew Milton Miller, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1889, for several years health officer of Alpena, Mich., died from malignant disease of the stomach at his home in Detroit, February 16, aged 42.

Pennick Browning Rogers, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, a member of the staff of the Manhattan Eye and Ear Hospital, New York City, died in New York, February 11, from pneumonia, aged 25.

Eley H. Harrison, M.D. University of Nashville (Tenn.) Medical Department, 1896, city physician of Texarkana, Texas, for two years, died at a sanitarium in Memphis, Tenn., February 15, after an operation for appendicitis, aged 35.

Charles H. Chubb, M.D. Jefferson Medical College, Philadelphia, 1856, of Palenville, N. Y., for a number of years president of the Greene County (N. Y.) Medical Society, died in Mount Vernon, N. Y., February 16, aged 72.

Howard Carey, M.D. University of Michigan Department of Medicine and Surgery, Ann Arbor, 1885, of Tenstrike, Minn., died at the Beltrami County Hospital, Bemidji, Minn., from nephritis, February 13, after a long illness.

David Onslow Smith, M.D. Harvard University Medical School, Boston, 1850, well known as a physician and musical composer, died at his home in Hudson Center, N. H., February 15, after a long and painful illness, aged 82.

Harry Martyn Brace, M.D. College of Physicians and Surgeons in the City of New York, 1881, mayor of Perth Amboy, N. J., died at his home in that city, February 19, from nephritis, after an illness of six months, aged 46.

Benjamin B. Ferguson, M.D. Jefferson Medical College, Philadelphia, 1893, a member of the Camden County Medical Society, died suddenly at his home in Camden, N. J., February 12, from cerebral hemorrhage, aged 53.

Benjamin Franklin Grant, M.D. Homeopathic Hospital College, Cleveland, Ohio, 1867, of Bath, N. Y., died at the Coburn Sanitarium in that city, February 17, from general nervous breakdown, after a long illness, aged 78.

L. A. Wilson, M.D. St. Louis Medical College, 1864, assistant surgeon of the Forty-fourth Missouri Volunteer Infantry during the Civil War, died at his home in Cuba, Mo., February 17, after a short illness, aged 78.

A. Perry Bowman, M.D. Chicago Homeopathic Medical College, 1878, president of the Iowa Homeopathic Medical Society, died suddenly at his home in Sioux City, from heart disease, February 19, aged 49.

William Gaines Kibbe, M.D. Tulane University of Louisiana Medical Department, New Orleans, 1878, a Confederate veteran, of Abbeville, La., died suddenly from apoplexy in that city, February 12, aged 64.

Eleanor Rolshausen, M.D. Woman's Medical College of Chicago; formerly of Logansport; county physician of Cass County, Ind., for two terms, died at her home in Royal Center, Ind., February 9, aged 72.

James Murphy, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1866, died at his home in Bangor, Mich., February 13, from cerebral hemorrhage, after a short illness, aged 63.

Hugh J. Sullivan, M.D. University of Wooster Medical Department, Cleveland, Ohio, 1889, coroner of Wayne County, Ohio, died at his home in Congress, from poison taken accidentally, February 24.

Oliver D. Coppedge, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1857, of Concrete, Texas, died in Cuero, Texas, February 9, from pneumonia, after a short illness.

W. Dixon Norwood, M.D. National Medical University of Chicago, 1895, was thrown from his buggy in a runaway accident at Shreveport, La., February 14, and almost instantly killed, aged 36.

Warren Elliott Harrigan, M.D. New York University, New York City, 1885, of Williamsburg, N. Y., died suddenly from heart disease while making a professional call, February 14, aged 43.

William Wallace Munn, M.D. New York University, New York City, 1868, died at his home in Lansing, Mich., February 10, after an illness of ten months from malignant disease, aged 66.

E. Jansen Westfall, M.D. College of Physicians and Surgeons in the City of New York, 1871, died at his home in Rahway, N. J., February 18, from pneumonia, after a brief illness, aged 59.

Walter K. Wadleigh, M.D. Dartmouth Medical School, Hanover, N. H., 1887, died at his home in Hopkinton, N. H., February 7, from nephritis, after a long illness, aged 41.

John Page Burwell, M.D. Jefferson Medical College, Philadelphia, 1880, formerly of Millwood, Va., died recently in Washington, D. C., from heart disease, aged 53.

William H. Cleckler, M.D. Missouri Medical College, St. Louis, 1897, of Gowen, I. T., was drowned while being ferried across Gaines Creek, near Gowen, February 12.

Everett V. Hamilton, M.D. University of Louisville (Ky.) Medical Department, 1889, died at his home in Austin, Texas, February 11, from heart disease, aged 41.

Jacob W. Du Bois, M.D. Bellevue Hospital Medical College, New York City, 1865, died at his home in Millersville, Md., from heart disease, February 10, aged 70.

Thomas B. Lyon, M.D. Kentucky School of Medicine, Louisville, 1880, died at his home in Upland, Ind., February 8, from asthma, after a long illness, aged 53.

Hermon Levi Cook, M.D. McGill University Medical Department, Montreal, 1854, died at his home in Toronto, Nov. 16, 1905, from pneumonia, aged 74.

Oscar K. Johnson, M.D. Kentucky School of Medicine, Louisville, 1891, died suddenly at his home in Queens, W. Va., February 18, aged 35.

Morris T. Judah, M.D. (County License, Indiana, 1897), of Gent, Ind., died in Bloomington, Ind., February 14, from heart disease, aged 65.

Henry W. Robertson, M.D. Harvard University Medical School, Boston, 1872, died recently at his home in Crapaud, P. E. I., aged 61.

Charles H. Barnhardt, M.D. Jefferson Medical College, Philadelphia, 1895, died at his home in Concord, N. C., February 7, from pneumonia.

Edwin V. Tegart, M.D. University of the Victoria College, Coburg, Ont., 1859, died at his home in Brantford, Ont., Sept. 9, 1905, aged 70.

George I. McKenzie, M.D. Jefferson Medical College, Philadelphia, 1864, died at his home in Pictou, N. S., in August, 1905, aged 67.

John Gillies, M.D. McGill University Medical Department, Montreal, 1867, died at his home in Teeswater, Ont., Aug. 15, 1905, aged 68.

Herman J. Van der Linden, M.D. University of Utrecht, Holland, 1884, of Delmont, S. D., died suddenly in that place, February 10.

William Hunter Carson, M.D., passed assistant surgeon, U. S. P. H. and M.-H. Service, died at Belize, British Honduras, July 25, 1895.

D. H. Harrison, M.D. McGill University Medical Department, Montreal, 1864, died at his home in Vancouver, B. C., recently, aged 63.

Benjamin A. Penn, M.D. Eclectic Medical Institute, Cincinnati, 1865, died at his home in Bryantsburg, Ind., February 10, aged 82.

Mark A. Perkins, M.D. Kentucky School of Medicine, Louisville, 1887, died at his home in Hastings, Neb., February 13, aged 65.

C. E. Bailey, M.D. Michigan College of Medicine, Detroit, 1881, of Orange, Mich., died recently in Ionia, Mich., aged 54.

Deaths Abroad.

L. de Wecker M.D., the famous ophthalmologist, died at Paris, February 13, aged 74. He was born in Germany and studied at Berlin, Vienna and Paris, practicing as a physician in France and Russia until 1862, when he settled in Paris and devoted himself to practicing and teaching ophthalmology. It was not then taught in the medical colleges as a special science. The list of his works and of the instruments and operations which he devised is a long one.

W. H. Gilbert, M.D., died at Baden, February 11, aged 48. He was known as a popular physician, a balneologist and proprietor of a sanatorium, but his fame rests principally on his suggestion of the medical study trips, which he inaugurated six years ago with great success from the start.

A. Gusserow, M.D., professor of obstetrics and a well-known writer on obstetric and gynecologic topics, died at Berlin, February 6, aged 69. He has been co-editor of the *Archiv f. Gynäkologie* since 1884.

Miscellany

TYPHOID FEVER PROPHYLAXIS.

Report on the Methods Employed in the Campaign Against Typhoid in Germany.

E. D. W. GREIG, B.Sc., M.B., C.M.
Captain Indian Medical Service, Deputed by the Secretary of State for India to Investigate the methods.

1. INTRODUCTION.

In order to study the various methods employed in the campaign against typhoid fever in Germany, permission was obtained, through the Foreign Office, for me to go to Germany and investigate the subject there. I reached Berlin Sept. 25, 1905, and was advised to study the methods, in the first instance, at the Kgl. Institut für Infectionskrankheiten. This I did until Oct. 22, 1905, on which date I proceeded to certain of the institutes for antityphoid work to study the practical application of the methods. I visited the institutes at the following places: Saarbrücken, Neunkirchen, Metz, Diedenhofen and Trier. At these places I studied the routine method of examination of the material sent in, and accompanied the superintendent on several occasions into the district to see the methods adopted in investigating outbreaks of typhoid fever in the villages. I was thus enabled to gain an insight into the practical working of antityphoid measures in Germany.

I desire to express my heartiest thanks to Professor Dr. Kirchner (*geh. ober. medicinalrat und vortragender rat. in ministerium d. geistl. unterrichts u. med. angelegenheiten*) for his advice and help, to Geh. Med. Rat. Professor Dr. Gaffky, director of the Kgl. Institut für Infectionskrankheiten, and

to Prof. Dr. P. Frosch, with whom I worked at the institute, for his constant courtesy, and to the superintendents of the institutes at Saarbrücken, Neunkirchen, Metz, Diedenhoften and Trier for affording me every facility for investigation.

2. FACTS OF IMPORTANCE IN CONNECTION WITH ANTITYPHOID MEASURES.

(a) Typhoid fever is spread to a large extent by the bacilli being directly carried from the sick to the healthy, e. g., infection of food, the use of contaminated eating and drinking utensils, etc. In this form of so-called "contact" infection the epidemic has a gradual onset and prolonged course. Should the bacilli gain access to a water supply used by a number of persons, then a large number of cases occur simultaneously—the so-called "explosion epidemic." The workers in Germany have found this latter mode of infection of comparatively rare occurrence as compared with the former.

(b) Living bacilli may continue in the feces and urine for long periods after the fever has ceased, and persons who give no history of previous attacks of typhoid fever, but who have been in contact with typhoid cases, may also harbor the bacilli in their stools. This group of cases is a very important one from the prophylactic point of view; they are the "bacilli carriers" of the Germans. These individuals are, in fact, "reservoirs" of the parasite and play an analagous part to the wild game in Nagana, which harbor the trypanosomes without any apparent signs of disease.

(c) The disease may run a very mild course, particularly in young children, and thus a number of cases may escape observation. The detection of these cases forms a very important part of the antityphoid work.

(d) A disease closely resembling typhoid fever, clinically, but caused by a totally distinct organism—*B. paratyphosus*—may occur at the same time as typhoid fever.

3. IT IS NECESSARY TO ORGANIZE SCIENTIFIC INSTITUTES NEAR THE TYPHOID EPIDEMIC TO PUT INTO PRACTICE THE ABOVE PRINCIPLES.

The German Government has founded eleven institutes, each with a superintendent and two or three trained scientific men, as well as one or two attendants, for the antityphoid campaign in Alsace-Lorraine. These institutes are fully equipped for the scientific work required. They are chiefly engaged in the prevention of the spread of typhoid among the civil population. The military population, which is a large one, has a similar organization, and, the conditions being much more favorable for carrying out the antityphoid measures, the results show a satisfactory reduction of typhoid fever among the troops.

Each institute has its defined area of work, but they also keep in touch with one another. The extent of the area of work is determined by the density of population, e. g., Trier, which is situated in a sparsely populated district, has a very extensive area, while those of Saarlouis, Saarbrücken and Neunkirchen are small, the population being very dense near these places. The institute receives its material from the various medical men in charge of the cases, and the members go out into the villages and towns with the district medical officer of health and investigate the details of the origin of the epidemic. As far as possible, each epidemic is traced back to its source. It is necessary to determine: (i) whether cases are imported ones; (ii) whether the infection is carried by water; (iii) whether carried by food; (iv) whether carried by men affected by typhoid fever, e. g., family epidemic; (v) whether a local focus of endemic typhoid, so-called "typhoid house," exists. In carrying into practice these lines of investigation certain lists kept in every village are examined in the first instance; these are: (a) list kept by police of reported arrivals in the village; (b) the list of attendance at the schools; (c) the sick list (*krankenkassenlisten*); (d) the list of deaths reported. From these lists valuable information is obtained, which forms a starting point for further investigation. It is generally found that the actual number of cases of typhoid fever far exceeds that which has been reported. The water supply, milk supply and general sanitary condition of the village are carefully inquired into, and the result of these, along with the result of the bacteriologic investigations, is entered in a special form, which is called *Fragebogen*, which contains thirty-nine headings, which are classified under (1) general, i. e., position and character of place, water and milk supply, etc.; (2) special, which contains details regarding patient, the disinfection carried out and the result of the bacteriologic investigations; (3) result of the case, whether it ended in death or recovery; the results of final bacteriologic investigation, and what sanitary improvements have been carried out.

The suspected cases having been picked out by the help of the information obtained from the above-mentioned sources, it is next necessary to examine the blood, feces and urine of each at the laboratory. The blood is taken in capillary tubes. For the urine and feces, special glass tubes, fitted with a metal spoon in the cork and carefully inclosed in a tin and wooden box, are left at the house. Directions are given to the nurse or friends to place three or four spoonfuls of the feces in one tube, which is packed and the box carefully labeled; some urine is also placed in another tube. These are forthwith dispatched to the institute. It is important for the investigation that they should be as fresh as possible. When these are received at the laboratory they are examined at once. The result of the examination is communicated to the medical man in charge of the case and the medical officer of health, who have the necessary disinfection and isolation carried out. When possible the isolation is carried out in special hospitals; otherwise the medical officer of health gives the necessary instructions to the friends for the isolation of the patient in the house. For the purposes of disinfection the liquor creosoti saponatus of the German Pharmacopeia is used. The eating and drinking utensils are immersed in it. The stools and urine, which are received in special vessels, are mixed with it. After the patient is entirely free from fever, the stool and urine are examined three times at intervals of ten days, and the patients are not allowed to leave the hospital until the result of the bacteriologic investigation shows them to be free from bacilli. It is found necessary to do so three times, as relapses are not infrequent, especially in the fourth week of convalescence, in which case the examinations have to begin afresh.

Having thus considered the general plan of work, it is necessary to consider:

4. TECHNIC FOR EXAMINATION OF MATERIAL FROM SUSPECTED CASES.

As a matter of practical routine, the following examinations are made:

(1) *Blood.*—The usual Widal reaction, carried out both microscopically and macroscopically. The test is made both with typhoid and paratyphoid bacilli. It may be observed that a positive Widal reaction is no proof that the present illness of the patient is typhoid fever, but a reaction, which is at first negative and then becomes positive, is absolute proof.

(2) *Feces and Urine.*—The examination of these for the presence of *B. typhosus* and *paratyphosus* is all important. Unfortunately we have not yet discovered an ideal method for the dectection of *B. typhosus* in feces; its recovery from the urine is a simpler matter. We have not got an "enriching" process similar to the peptone water for the detection of the vibrio of cholera. The newer methods, however, are a distinct advance on our older methods, and no doubt further advances will be made.

The following are the methods used: V. Drigalski and Conradi.[1] Malachite green method of Lentz.[2] Fuchsin agar method of Endo.[3] Caffein-fuchsin agar method of Gaehtgens.[4]

1. Drigalski and Conradi: Zeitschrift für Hygiene und Infectionskrankheiten, vol. 39, 1902.

2. Lentz and Tietz: "Weitere Mittheilungen über die Anreicherungsmethode für Typhus und Paratyphus bazillen mittelst einer Vocultur auf malachit grün agar." From Klinischen Jahrbuch: Gustav Fischer, Jena, 1905.

3. Endo: Centralblatt für Bakter., vol. xxv, p. 109.

4. Gaehtgens: Centralblatt für Bakteriologie. 1 abt. orig., vol. xxxix, No. 5, p. 634.

In the institutes visited, either the Drigalski-Conradi method alone was employed or in combination with the malachite green method. The Endo method was employed in Diedenhoften, as well as the others. Each method has its advantages and disadvantages, but it is certain that rapidity in detecting the typhoid colonies is largely a matter of experience and practice, and an observer who is accustomed to recognize it on one medium may fail to do so on another. The details of the mode of preparation of each of these are given:

A.—PREPARATION OF DRIGALSKI-CONRADI MEDIUM.

(I) *Agar Preparation.*—To three pounds of finely cut horseflesh add two liters of water. Allow it to stand till next day. The expressed meat juice is boiled for one hour and filtered. Add 20.0 gr. peptone sicca, Witte, 20.0 gr. nutrose, 10.0 gr. NaCl; boil one hour, now add 70 gr. bac agar, then boil three hours (or one hour in autoclase), render slightly alkaline (indicator litmus paper). Filter, boil half an hour.

(II) *Litmus Solution.*—Litmus solution (Kubel and Tieman) 260.0 c.c., boil for ten minutes, add milk sugar (chemically pure) 30.0 gm. Boil fifteen minutes.

(III) Add the hot litmus-milk-sugar solution to the liquid agar solution cooled to 60 C. Shake well. Render it again faintly alkaline. The color of the froth is a good indicator. Add then 2.0 c.c. of a hot sterile solution of 10 per cent. water-free soda, further add 20 c.c. of a freshly prepared solution of 0.1 gr. crystal violet B. (Höchst) in 100.0 c.c. warm water (distilled).

One has now a meat-water peptone-nutrose agar with 13 per cent. litmus and 0.01 per mille crystal violet. This can be poured directly into plates and the remainder kept in 200 c.c. flasks.

B.—THE MALACHITE GREEN ENRICHING METHOD OF LENTZ.

The proper preparation to use is malachitgrün (crystal) (Höchst) dilution 1-22,000. Preparation: Three pounds fat-free flesh (oxen), finely divided, macerated with two liters of water for sixteen hours. The extract is expressed, boiled for half an hour, filtered, then 3 per cent. agar added and boiled for three hours; add to the agar 1 per cent. peptone, 0.5 NaCl, and 1 per cent. nutrose (this may be omitted). This is brought to the litmus neutral point by soda solution with Duplitest paper. Boiled one hour, filtered through linen. The reaction of the finished agar is sometimes distinctly acid. It is filtered into small flasks of 100-200 c.c.

Before the addition of the malachite green, the hot agar is tested by Duplitest paper and so far alkalised with sterile soda solution until the red and violet is distinctly red-violet. This reaction point corresponds in agar, without nutrose, to an alkalescent degree of 1.8 per cent. normal soda below the phenolphthalein-neutral point; if the agar contains nutrose, which remains neutral toward litmus and bacteria, then the alkaline reaction corresponds to 3.5 per cent. normal soda solution below the phenolphthalein point.

To 100 c.c. of the hot agar 1 c.c. of a 1-220 solution malachite green (the solution keeps good for ten days) is added, i. e., agar contains 1-22,000. By this concentration of malachite green (crystal) the growth of the usual kinds of *B. coli*, as well as many alkali-forming organisms, is greatly diminished and practically prevented. The *B. typhosus* growth is also diminished, but only so far that after twenty-four hours the colony can be recognized with the naked eye, the size of a particle of sand, while, after a longer period in the incubator, in two to four days, larger, stronger colonies appear which color the agar yellow.

The finished agar is poured at once into Petri dishes in 2 mm. thick layers. The dishes are well dried.

C.—THE FUCHSIN AGAR METHOD OF ENDO.

In an enamel pot put two liters of water (tap), 20.0 gr. Liebig's meat extract, 20 gr. peptone sicca, Witte, 10.0 NaCl, and 80 gr. bac agar. Boil, filter, neutralize. Add 10 gr. chemically pure milk sugar and 10 c.c. of 10 per cent. crystallized fuchsin in 96 per cent. alcohol. Then the medium becomes dark red in color. Now add 25 c.c. of a 10 per cent. sodium sulphite solution. The medium becomes gradually discolored, but only completely so when the agar is stiff. Sterilize in small tubes for thirty minutes. Pour into plates.

D.—THE CAFFEIN-FUCHSIN AGAR METHOD OF GAEHTGENS.

Preparation of the Medium.—As a result of his experiments, he found that an addition of 0.33 per cent. chemically pure caffein to Endo's medium (described above), which had an alkalinity equal to 1.5 per cent. normal KOH below the neutral point of phenolphthalein, markedly increased the value of the medium as a means of detecting *B. typhosus* in the stool.

Endo medium, prepared in exactly the same way as described by himself, is liquified, made alkaline to the required degree, and the required amount of caffein added.

In all these methods attempts are made, with more or less success, to check the growth of members of the coli group and to encourage the development of the *B. typhosus* and *paratyphosus*. In the Drigalski and Conradi method, crystal violet is used; in the Lentz method, malachite green; in the Endo, fuchsin; and Gaehtgens, caffein. At the same time the typhoid colonies are differentiated from the coli group by a color reaction. In Drigalski the typhoid colonies are blue and the coli red. In the Endo the coli colonies turn bright red, while the typhoid colonies are colorless. In both cases the fact that *B. coli* produces acid in presence of milk sugar is made use of by, in the one case, litmus, and the other, decolored fuchsin. A color reaction is thus obtained in both cases.

Malachite green checks the growth of both coli and typhoid very markedly, but more especially coli. Accordingly, when a stool is planted out on such an agar plate, it may not be possible at the end of twenty-four hours to detect any colonies of typhoid. Lentz has found, however, that if such a plate is flooded with normal salt solution and gently rocked and then allowed to stand for a few minutes the delicate typhoid colonies diffuse themselves in the solution, while the solid coli colonies sink to the bottom, so that if a little of this fluid is plated out on Drigalski plates practically a pure growth of *B. typhosus* or *paratyphosus* may be obtained. In practice it is found that *B. paratyphosus* is readily "enriched" in this way, but the *B. typhosus* not to the same extent.

Having thus seen the method of preparation of the different culture media and principles of their use, it is next necessary to consider the method of preparation and insemination of the plates with the feces and urine. The following are the steps:

1. *Preparation of the plates.*—In this investigation it is more convenient to use a larger size of Petri dish than that generally used. It should be from 15 to 20 centimeters in diameter. About 20 to 25 c.c. of the medium is poured into each plate. The plates are allowed to remain open until all the steam has evaporated and the agar is stiff. It is essential that the surface of the plates should be quite dry and firm. Contamination by air-organisms does not occur on account of the aniline dye present in the culture media.

2. *Preparation of the Feces.*—The feces are thoroughly mixed with a small quantity of sterile normal salt solution. Then, when one malachite green plate is used in combination with two Drigalski plates, about 0.5 c.c. of the mixture is placed on a green plate. This amount may also be used with the caffein-Endo, but with the Drigalski plates alone a much smaller amount, about one or two loopfuls, is sufficient.

In the case of urine, several drops are placed on the green plates, on the Drigalski plate one drop is sufficient.

Having thus got the prepared material on the first plate, the next step is the smearing. This is done in the same way, whether green and blue, or all blue, plates are used.

3. *Smearing of the Plates.*—A sterile glass rod, which has had its terminal an inch or two bent at right angles, is used.

The material on the first plate is thoroughly smeared by rubbing the glass spatula, as it is called, in all directions over the surface of the agar. Then, without sterilizing it, the same spatula is rubbed over the surface of a second plate, and then over a third and fourth. After the smearing, the plates are allowed to stand open till quite dry. The plates are then placed in the incubator at 37 C., and left there for twenty to twenty-four hours. At the end of this period the next step is examination of the colonies.

THE EXAMINATION OF THE COLONIES.

It will be convenient to state briefly the characters of the colonies on the different media already mentioned.

1. *Drigalski-Conradi.*—By this method the first plate is so overgrown that it is useless for further examination. The second, third and fourth, however, are carefully inspected. It is very desirable to use a hand lens for this purpose, also to direct the plate, so that the light falls from a wall, not directly from the window, as a better contrast between the colonies is obtained. After a good deal of practice, it is possible to recognize immediately a colony of *B. typhosus* on the plate even if only a single one exists, but at first, it takes a considerable amount of time, because a large number of colonies are found which closely resemble those of *B. typhosus*, and it is, therefore, necessary to test each of them according to the methods described later. Broadly stated, the *B. coli* colonies are more or less red in color, not transparent, and from 0.6 millimeters in diameter, while the *B. typhosus* colonies have a diameter of from 1 to 3 millimeters. The color is blue with a dash of violet; they resemble dew drops.

2. *Combined Malachite Green and Drigalski Method.*—As will be remembered, the first plate in this method was malachite green agar, and the second and third Drigalski-Conradi. At the end of twenty hours the second and third plates are examined, and present the same characters as noted above. If typhoid colonies are found on these plates then the investigation is finished, but, if they are not, it is possible by a further procedure to detect them, and this is the special merit claimed for this method. The procedure is this: the green plate is flooded with sterile normal saline and gently rocked, and then allowed to stand for a few minutes. By this means it is found that the more delicate typhoid and paratyphoid colonies readily diffuse themselves in the liquid, while the heavier coli colonies, whose growth has been remarkably inhibited by the malachite green, sink to the bottom. The glass spatula is then dipped in the salt solution and rubbed on one or two Drigalski-Conradi plates, which are placed in the incubator at 37 C. for twenty hours, and are then examined in the usual manner. This method of "enriching" gives very good results with *B. paratyphosus*; the *B. typhosus* is not "enriched" to the same extent, but still it is an additional means of detecting this organism, and in the hands of Lentz has yielded good results.

3. *Endo Method.*—Here all the coli colonies are bright red at the end of twenty hours, and, therefore, very easily separated. The typhoid colonies are colorless and very transparent. A stool plated on this medium gives a very striking picture, and the use of this method does not strain the eyes to the same extent as the blue plates. If a very large number of coli organisms are present the plate is liable to become entirely red, and this interferes with the examination of the typhoid colonies. On the whole, this medium appears a very useful one for the separation of *B. coli* and *typhosus*.

4. *Gaehtgens Caffein-Fuchsin Agar.*—The appearance is essentially the same as that on the Endo plates, but the growth of *B. coli* is markedly inhibited.

Having thus seen the general appearance of the colonies, the next step is:

THE IDENTIFICATION OF SUSPECTED TYPHOID COLONIES.

In practice this is done as follows: A portion of the colony is touched with a very fine platinum needle and placed in a

drop of highly active serum, in dilution 1-100, on a slide and carefully mixed; at the same time a control should be made with a drop of normal saline solution placed alongside. The agglutination, if it occurs, may be observed with a hand lens or low power of the microscope. Both typhoid and paratyphoid sera are used. In this way a large number of colonies can be rapidly examined. Should complete agglutination occur, then the remainder of the colony is inoculated into tubes containing various nutrient media. From the academic point of view, a considerable number of these are required, but in practice it is found that about three amply meet all the necessities, of which ordinary agar slope, litmus whey and neutral red agar or grape sugar are most commonly used.

The following is a complete list of the different media, with the methods of preparation:

(a) *Barsikow milk sugar.*—Made thus: (I) 1 gr. nutrose, 0.5 gr. NaCl, aqua distill. 100 c.c. Sterilize, filter several times to clarify (II) 5 c.c. litmus solution (Kubel and Tieman) 1 gr. milk sugar or grape sugar or mannite, maltose, etc. Sterilize six to eight minutes. Cool to 60 per cent. C. Mix (i) and (ii). Sterilize for ten minutes on three successive days.

(b) *Mannite,* as above.

(c) *Barsikow's grape sugar,* as above.

(d) *Litmus whey*: 500 c.c. milk; add 10 to 12 c.c. N/1 solution HCl to precipitate casein. Neutralize with soda solution. Boil one to two hours. Let the precipitate fall to the bottom. Take 100 c.c. of fluid and add 5 c.c. litmus solution. Plate in tubes, sterilize two to three hours at 100 C.

(e) *Neutral roth agar*: Agar 2 per cent., grape sugar 0.3 per cent., neutral roth solution 1 c.c. (saturated watery solution of Ehrlich's neutral roth). Mix: sterilize.

Should the agglutination be positive in 1-100 dilution of serum, and the organism gives characteristic reactions in the various media, the diagnosis of typhoid or paratyphoid, as the case may be, can then be made. Only in exceptional cases is it necessary to perform the Pfeiffer experiment.

The above is a description of the routine examinations made at the institutes. In addition to the urine and feces it may occasionally be necessary to examine the expectoration from the lungs, pus and postmortem material. The procedure is exactly similar to that adopted in the examination of feces.

To determine the presence of typhoid bacilli in the blood it is necessary to take about 5 c.c. from a vein and add to it a large quantity of sterile bouillon to neutralize the bactericidal substances present in the blood.

The determination of *B. typhosus* in water is not very satisfactory.

The above is an outline of the methods adopted in the campaign against typhoid in Germany.

It will be readily seen that in a civil population the practical difficulties are enormous. Isolation can not be carried out in many cases, and the disinfection of the urine and feces must be left in the hands of the individual himself, and whether the instructions are implicitly followed is at times questionable. So under these circumstances the progress must be slow. On the other hand, in the army it ought to be a simpler matter, because there the individuals are constantly under observation and discipline. It is a matter of common knowledge that to send a person harboring the parasites of disease back among a number of uninfected individuals is a sure method of lighting up fresh infection. The danger of typhoid infection is that the individual, although appearing perfectly well, may harbor the bacilli and so infect others. The point of importance to remember is that only by repeated bacteriologic examination of the feces and urine are we in a position to say when a man can safely return to duty without being a source of danger to his neighbors; and, further, only by this examination can the latent foci of the disease be discovered; these unrecognized harborers of the disease, the "bacilli carriers," are the chief means by which the disease continues to spread, in spite of all improvements in sanitation.

After these investigations have been continued for some time we get a valuable accumulation of scientific facts, which enables us to intelligently correct real hygienic faults.

It is an interesting fact that methods based on the same principles are employed in Germany to combat the spread of cholera, and our methods for the detection of the cholera vibrio are much more perfect than those for the *B. typhosus* in feces, because we have in peptone water an excellent "enriching" medium for the vibrio of cholera.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish name or address will be faithfully observed.

INFORMATION WANTED ABOUT DR. COLIN M'KINZIE.

Dr. J. B. Carrell, Hatboro, Pa., and Mr. Webster A. Melcher, 1124 Girard Bldg., Philadelphia, have been endeavoring in vain to learn something about Dr. Colin McKinzie, who wrote or delivered some lectures on gynecology some 125 or more years ago. Copies of these lectures were owned by one J. S. Thompson in 1784. Any facts or suggestions as to avenues for inquiry will be welcomed.

"DISTRIBUTION OF COEFFICIENT."

———, COLO., Feb. 18, 1906.

To the Editor:—Can you explain to me "distribution of coefficient" used in the article "Theory of Narcosis" by Meyer, in THE JOURNAL, Jan. 20, 1906? He bases his premises on that table. What was his mixture of fat and water? How does he obtain his distribution coefficient? He has aroused my interest, but did not exactly satisfy me. A. J.

ANSWER.—By "distribution coefficient" is meant the proportion of a given substance that is distributed between two or more different solvents. This may be illustrated as follows: Suppose we have a substance which is twice as soluble in benzine as it is in water, and we shake it up in a flask containing a mixture of equal parts of benzine and water. Part of the substance will be dissolved in the water, and just twice as much will be dissolved in the benzine. This proportion of 2 to 1 will be the "distribution coefficient," or, as it is usually called, "partition coefficient" of the substance in a mixture of water and benzine. The common laboratory practice of extracting many organic substances that are highly soluble in ether, from watery solutions, by shaking up a mixture of the watery solution and ether in a suitable container depends on this principle.

In Professor Meyer's experiments, the narcotic to be studied was shaken up in a mixture of equal parts of fat and water, and the proportion of the narcotic that was taken up by the fat and the proportion taken up by the water were ascertained. The relation of the amount of narcotic dissolved by the fat to the amount dissolved by the water constitutes the coefficient. For example, if in a given experiment 4 grams of tetranal were dissolved in the fat and 1 gram in the water, the coefficient for tetranal in this mixture would be 4/1 or 4.

State Boards of Registration

COMING EXAMINATIONS.

MAINE State Board of Registration of Medicine, City Building, Portland, March 13. Secretary, Wm. J. Maybury, Saco.

CONNECTICUT Medical Examining Board, City Hall, New Haven, March 13-14. Secretary, Charles A. Tuttle, New Haven.

MASSACHUSETTS Board of Registration in Medicine, State House, Boston, March 13-14. Secretary, Edwin B. Harvey, Boston.

Arizona October Report.—Dr. Ancil Martin, secretary of the Board of Medical Examiners of Arizona, reports the written examinations held at Phoenix, Oct. 2-3, 1905, and Jan. 1-2, 1906. At both examinations the number of subjects examined in was 9; total number of questions asked, 90; percentage required to pass, 75.

At the October examinations the total number of candidates examined was 9, of whom 8 passed and 1 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Kentucky School of Medicine	(1905)	79.2
College of P. and S., Baltimore	(1904)	80.7
Cooper Med. Coll., San Francisco	(1896)	75
University of Iowa	(1897)	76.9
Rush Med. Coll.	(1903)	76.3
University of Pennsylvania	(1903)	80.2
Jefferson Med. Coll.	(1899)	84.6
Denver College of Medicine	(1901)	83.4
FAILED.		
University of Louisville	(1904)	49.3

At the January examination the number of candidates examined was 10, of whom 9 passed and 1 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
American Med. Coll., St. Louis	(1892)	75
College of P. and S., San Francisco	(1904)	75

University of Kentucky	(1904)	75
University of the South	(1904)	75
College of P. and S., Baltimore	(1892)	79
Medical College of Indiana	(1904)	75
Georgetown University	(1904)	81
College of P. and S., Atlanta	(1902)	80
Vanderbilt University	(1890)	75
FAILED.		
Detroit Coll of Med.	(1894)	63.3

New Hampshire January Report.—Dr. H. C. Morrison, regent of the State Board of Medical Examiners of New Hampshire, reports the written examination held at Concord, Jan. 9-10, 1906. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 23, of whom 14 passed and 9 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Illinois Med. Coll.	(1902)	75.4
Jefferson Med. Coll	(1905)	78.7
University of Vermont	(1905) 83.1,	83.7
Harvard Medical School	(1904) 83.2; (1905)	83
Baltimore Med. Coll.	(1905)	77.9
Medical School of Maine	(1903)	89.3
Medico-Chirurgical Coll., Philadelphia	(1903)	80.1
Dartmouth Medical School	(1905)	78.2
College of P. and S., Boston	(1899)	76.6
College of P. and S., New York	(1902)	82
Boston University	(1896) 97; (1903)	85
FAILED.		
Kentucky University	(1904)	64.1
Laval University, Quebec, (1903) 66.8; (1904) 66.5, 70.6; (1905) 67.3		
Bishop Med. Coll., Montreal	(1901)	66.7
University of Maryland	(1905)	73.8
Maryland Med. Coll., Baltimore	(1904)	68.9
Harvard University	(1901)*	

* No percentage given.

Oregon January Report.—Dr. Byron E. Miller, secretary of the Board of Medical Examiners of the state of Oregon, reports the written examination held at Portland, Jan. 2-4, 1906. The number of subjects examined in was 15; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 33, of whom 25 passed and 8 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Bennett Med. Coll., Chicago	(1905)	85.8
Tulane University, New Orleans	(1901)	80.8
Rush Med. Coll., (1881) 75.2; (1903) 82.6; (1904) 75.6, 79.2, 76.4.		79.6
Medico-Chirurgical College, Kansas City	(1900)	76.6
Harvard University	(1902)	84.8
University of Halsingfors, Finland	(1897)	90.6
Cooper Med. Coll., San Francisco	(1892)	79.4
University of Oregon	(1905) 77.9,	83.0
College of P. and S., Chicago	(1899)	75.5
University of Iowa	(1896)	78.4
University of Pennsylvania	(1903)	82.5
American Med. Miss. Coll., Chicago	(1902)	84.0
College of P. and S., New York, (1881) 80.6; (1901) 81.5; (1904) 76.4.		
Saginaw Valley Med. Coll	(1902)	78.7
Georgetown University	(1901)	86.7
University of Michigan	(1905)	85.9
Willamette University	(1905)	76.7
University of Minnesota	(1904)	81.1
FAILED.		
Toledo Med. Coll.	(1898)	73
Chicago Med. Coll.	(1884)	73
University of Vermont	(1905)	67
Detroit Coll. of Med.	(1896)	74
Barnes Med. Coll., St. Louis	(1894)	74
University of Oregon	(1905)	68
Willamette University	(1905)	64
Non-graduate		66

Wisconsin January Report.—Dr. J. V. Stevens, secretary of the Wisconsin Board of Medical Examiners, reports the written examination held at Milwaukee, Jan. 9-11, 1906. The number of subjects examined in was 13; total number of questions asked, 120; percentage required to pass, 75. The total number of candidates examined was 19, of whom 10 passed and 9 were conditioned. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent
College of P. and S., Chicago	(1904) 88.6; (1905)	87.8
Wisconsin Coll. of P. and S.	(1905)	81
Milwaukee Med. Coll.	(1905)	86
Northwestern University	(1905)	87.8
Rush Med. Coll.	(1905) 85.6,	86.4
Detroit Coll. of Med.	(1904)	79.3
University of Michigan, Homeo. Dept.	(1905)	85.3
University of Minnesota	(1905)	84.9
CONDITIONED.		
College of P. and S., Milwaukee (2 candidates)	(1905)	
Queen's University, Ontario	(1905)	
Eclectic Med. Coll., New York	(1900)	
College of P. and S., St. Louis	(1905)	
Albany Med. Coll.	(1887)	
Northwestern University	(1905)	
Indiana Med. Coll.	(1905)	
Hahnemann Med. Coll., Chicago	(1905)	

The Public Service

Army Changes.

Memorandum of changes of stations and duties of medical officers, U. S. Army, week ending Feb. 24, 1906:

Steer, Samuel L., asst.-surgeon, ordered to accompany Troops B and M, 3d Cavalry, from Fort Assiniboine, Montana, to Presidio of San Francisco. On completion of this duty Captain Steer will return to his station.

Reilly, John J., asst.-surgeon, retired from active service with the rank of captain, on account of disability incident to the service, to date from Feb. 4, 1906.

McCaw, W. D., surgeon, leave of absence extended until such time as will enable him to rejoin station after return of the transport *Sumner* to New York City.

Kirkpatrick, Thos. J., asst.-surgeon, left Fort Moultrie, S. C., on ten days' leave.

Kieffer, Chas. F., surgeon, left Fort D. A. Russell, Wyo., on ten days' sick leave of absence.

Ruffner, E. L., asst.-surgeon, left Columbus Barracks, Ohio, with recruits en route to Fort Worden, Wash.

Byars, Caspar R., contract surgeon, returned to Fort Sam Houston, Texas, from leave of absence.

Parkman, Wallace E., contract surgeon, returned to Fort Assiniboine, Mont., from leave of absence.

Marshall, John S., examining and supervising dental surgeon, left San Francisco for temporary duty at Honolulu, H. T.

Waddell, Ralph W., dental surgeon, left San Francisco for duty in the Philippines Division.

Wing, Franklin F., dental surgeon, relieved from duty at Fort Riley, Neb., and ordered to duty at Fort Omaha, Neb.

Lauderdale, Clarence E., dental surgeon, left Fort Logan H. Roots, Ark., and arrived at Fort Reno, Okla., for duty.

Whitney, Walter, contract surgeon, left Columbus Barracks, Ohio, to accompany recruits to San Francisco.

Rebert, Michael A., contract surgeon, returned from temporary duty at Fort Schuyler, N. Y., to Fort Totten, N. Y.

Brewer, Isaac W., contract surgeon, left Fort Apache, Ariz., and arrived at Fort Huachuca, Ariz., for duty.

Reagles, James, contract surgeon, left Fort Yellowstone, Wyo., and arrived at Fort Keogh, Mont., for duty.

Boyer, Arthur L., contract surgeon, ordered from Kingsbridge, N. Y., to Fort Jay, N. Y., to accompany the 8th Infantry thence to Philippine service.

Cook, William H., contract surgeon, ordered from Gravesend, N. Y., to Fort Niagara, N. Y., to accompany the 8th Infantry thence to Philippine service.

Navy Changes.

Changes in the Medical Corps U. S. Navy, for the week ending Feb. 24, 1906.

Tyree, F. W., acting asst.-surgeon, detached from the Naval Training Station, San Francisco, and ordered to the Naval Recruiting Station, Kansas City, Mo.

Public Health and Marine-Hospital Service.

List of changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine-Hospital Service for the seven days ending Feb. 21, 1906:

Rosenau, M. J., P. A. surgeon, detailed to attend meetings of committee of American Bacteriologists in New York, N. Y., Feb. 24, relative to the standardization of tetanus antitoxic sera.

Moore, Dunlop, P. A. surgeon, relieved from duty at Yokohama, Japan, and directed to proceed to Honolulu, Hawaii, reporting to Chief Quarantine Officer for duty.

Currie, D. H., P. A. surgeon, department letter of July 27, 1905, amended so as to grant P. A. Surgeon Currie twenty-one days' leave of absence from July 18, 1905, instead of two months.

Burkhalter, J. T., P. A. Surgeon, granted seven days' extra leave of absence from February 24.

Friesell, C. M., acting asst.-surgeon, granted twenty days' leave of absence from February 14.

Hallet, E. B., acting asst.-surgeon, granted five days' leave of absence from February 19.

Townsend, F., acting asst.-surgeon, granted seven days leave of absence from February 21.

Walerius, M., pharmacist, department letter of January 30 amended so as to grant Pharmacist Walerius thirty days' leave of absence from February 8, instead of February 15.

BOARD CONVENED.

Board of officers convened to meet at the bureau, February 27, for the purpose of making physical examination of an officer of the Revenue Cutter Service: detail for the board: Assistant Surgeon-General W. J. Pettus, chairman; Assistant Surgeon J. W. Trask, recorder.

APPOINTMENT.

Albert J. Nute appointed acting assistant surgeon for duty at Port Huron, Michigan.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, Public Health and Marine-Hospital Service, during the week ending February 23, 1906:

SMALLPOX—UNITED STATES.

California: Los Angeles, Feb. 3-10, 2 cases; San Francisco, 13 cases.
Florida: Jacksonville, Feb. 10-17, 9 cases.
Georgia: Augusta, Feb. 12-19, 10 cases.
Louisiana: New Orleans, Feb. 10-17, 17 cases.
Maine: Biddeford, Feb. 10-17, 1 case.
Maryland: Baltimore, Feb. 10-17, 4 cases.
Michigan: Ann Arbor, Feb. 10-17, 1 case.
Missouri: St. Louis, Feb. 10-17, 3 cases.

Montana: Missoula County, Jan. 1-31, 1 case; Silverbow County, 1 case.
Nebraska: South Omaha, Feb. 10-17, 2 cases.
New York: Buffalo, Jan. 10-31, 1 case; New York, Feb. 10-17, 1 case.
Ohio: Cincinnati, Feb. 9-16, 9 cases.
Tennessee: Knoxville, Feb. 10-17, 1 case.
Wisconsin: Appleton, Feb. 10-17, 2 cases; Milwaukee, Jan. 27-Feb. 3, 1 case.

SMALLPOX—FOREIGN.

Brazil: Bahia, Dec. 8-30, 25 cases, 2 deaths; Pernambuco, Jan. 1-15, 43 deaths; Rio de Janeiro, Jan. 7-28, 15 cases, 1 death.
Chile: Antofagasta, Jan. 18-Feb. 1, 34 cases, 17 deaths; Coquimbo, Jan. 18-Feb. 1, 3 cases.
China: Canton, Dec. 25-31, 40 cases; Hong Kong, Jan. 6-13, 1 case; Shanghai, Dec. 30-Jan. 6, 1 case, 2 deaths.
France: Paris, Jan. 27-Feb. 3, 12 cases.
Great Britain: Bristol, Jan. 27-Feb. 3, 5 cases.
Greece: Athens, Jan. 15-22, 1 death.
India: Bombay, Jan. 16-23, 5 deaths; Calcutta, Jan. 6-13, 55 deaths; Karachi Dec. 26-Jan. 2, 3 cases; Madras, Jan. 13-19; 12 deaths; Rangoon, Jan. 6-13, 14 deaths.
Italy: General, Jan. 25-Feb. 1, 39 cases.
Mexico: Tuxpam, Jan. 31-Feb. 13, 5 deaths.
Russia: St. Petersburg, Jan. 20-27, 5 cases.

YELLOW FEVER—FOREIGN.

Brazil: Rio de Janeiro, Jan. 7-28, 8 cases, 6 deaths.
Ecuador: Guayaquil, Jan. 8-28, 20 cases, 12 deaths.

CHOLERA—INSULAR.

Philippine Islands: Manila, Dec. 23-Jan. 6, 5 cases, 5 deaths; Provinces, Jan. 11, present.

CHOLERA—FOREIGN.

India: Calcutta, Jan. 6-13, 61 deaths; Madras, Jan. 13-19, 1 death; Rangoon, Jan. 6-13, 1 death.

PLAGUE—INSULAR.

Philippine Islands: Manila, Dec. 23-30, 1 case, 1 death.

PLAGUE—FOREIGN.

Brazil: Pernambuco, Jan. 8-15, 2 deaths; Rio de Janeiro, Jan. 7-28, 9 cases, 1 death.
Chile: Antofagasta, Jan. 18-Feb. 1, 2 cases, 1 death.
China: Hong Kong, Jan. 6-13, 2 cases, 2 deaths.
India: General, Jan. 6-13, 1,351 cases, 1,140 deaths; Bombay, Jan. 16-23, 31 deaths; Calcutta, Jan. 6-13, 16 deaths; Karachi, Dec. 26-Jan. 2, 9 cases, 7 deaths; Madras, Jan. 13-19, 4 deaths; Moulmein, Jan. 20, 1 death; Rangoon, Jan. 6-13, 18 deaths.
Japan: Kobe, Dec. 9-Jan. 11, 36 cases, 30 deaths; Jan. 13-20, 3 cases, 2 deaths; Osaka, Dec. 9-Jan. 11, 73 cases, 62 deaths.
Peru: Callao, Jan. 12-25, 1 case; Lima, 7 cases, 5 deaths; Mollendo, 6 cases, 2 deaths; Paita, 1 case; Trujillo, 25 cases, 10 deaths.

Book Notices

THE REAL TRIUMPH OF JAPAN: The Conquest of the Silent Foe. By Louis Livingston Seaman, M.D., LL.D., late surgeon-major U. S. V. E. Cloth. 291 pages. Illustrated. Price, $1.50. New York: D. Appleton & Company, 1906.

In the dedication of this book is given the text on which the entire argument is based and which is directly in line with Major Seaman's efforts toward the abolition of the officialism which, he claims, renders ineffective in great measure the work of the undoubtedly able men in the medical department of the United States Army. The dedication reads as follows:

"To the medical and sanitary officers of the Japanese Army, who have proved that the normal condition of the soldier is health, and that those who die in war should fall on the firing line and not by the wayside from disease; to the heroic dead of that army, who have gladly given their lives for the honor and integrity of their beloved country; to that vast army of American dead, whose lives in war have been needlessly sacrificed through preventable diseases, ignorance and incompetency, and to our lawmakers, through whom the necessary reforms can come that will prevent the repetition of such sacrifice, these lines are dedicated."

Dr. Seaman quotes from the statistics of deaths from wounds and from disease in modern wars, demonstrating that in the Russo-Japanese war the ratio was more than reversed on account of the excellence of the hygienic regulations of the Japanese medical department. Sandwiched in between arguments for the reorganization of the Medical Department of the United States Army are interesting narratives of the author's experiences in Manchuria and Japan toward and after the close of the war. He pays especial attention to the system and practice of hygiene in the Japanese Army and gives a most interesting sketch of the history of medical science in Japan. He devotes a chapter to the discussion of beri-beri and its practical extinction in the navy through the researches and exertion of Baron Takaki, and closes with an appeal to the American nation that it should not forget the lessons of the War of the Rebellion and afterward of the Spanish-American War, but should follow the example of Japan and be prepared to meet emergencies that may arise, with the greatest possible exercise of all that modern medical, surgical, and especially hygienic, science teaches.

A MEMOIR OF DR. JAMES JACKSON, with Sketches of his Father, Hon. Jonathan Jackson, and his brothers Robert, Henry, Charles and Patrick Tracy Jackson; and Some Account of Their Ancestry. by J. J. Putnam, M.D. Cloth. Pp. 456. Price, $2.50 net. New York: Houghton Mifflin & Co., 1905.

This will be considered a rather belated memoir when it is realized that forty years have elapsed since Dr. Jackson's death, and especially since he had attained to an advanced old age when he died. But, while belated, it is none the less welcome, if for no other reason than that it is another addition to the literature that enlightens us regarding medical affairs at the time when American medicine was in the forming.

Dr. Jackson was one of the most influential of the physicians in and around Boston during the first quarter of the nineteenth century. While he wrote but little that has come down to us, or that left an impression on medical literature, he was one of those who influenced the affairs of his time and who molded professional and public opinion, not only for the then present, but for the future. He returned from his European studies in 1800, just at the time that vaccination was being introduced, and to him belongs the credit of being the first physician in this country to have absolute confidence in the Jenner theory. He had obtained this confidence from his experiences in the smallpox hospitals of London under Dr. Woodville, the enthusiastic follower of Jenner. Dr. Jackson was a contemporary with Dr. John Collins Warren, and the two were co-workers in many schemes for the betterment of the profession and for improved hygienic conditions of the public. These two were the leaders in the reorganization of the Massachusetts State Medical Society, Dr. Warren being the first president of the new society; and the Massachusetts General Hospital owes its inception to Drs. Warren and Jackson, the former having the credit for conceiving the idea. Thus in the memoirs before us we are carried back to those good old times that we all like to read about, to the time when character and integrity and hard work were the ideals. Nearly half of the volume is devoted to a history of Jackson's ancestors, and these and their times are described in an interesting, if not a charming, manner.

To those who love to read of men who have done things, and of the early history of our country, especially as it relates to medicine, these memoirs will be found both satisfactory and pleasing.

THE ART OF COMPOUNDING. A Text-book for Students and a Reference Book for Pharmacists at the Prescription Counter. By Wilbur L. Scoville, Ph.G., formerly Professor of Theory and Practice of Pharmacy in the Massachusetts College of Pharmacy. Third edition, Revised and enlarged. Cloth. Pp. 337. Price, $2.50 net. Philadelphia: P. Blakiston's Son & Co., 1904.

Now that the physician is beginning especially to concern himself as to the character and composition of medicines, a book should be welcome which affords information as to how best to prepare many of the pharmaceutical mixtures extemporaneously. While the work is based on the eighth revision of the U. S. Pharmacopeia and the official preparations are used as examples, most unofficial related classes are included with similar illustrations; thus, for instance, under "Miscellaneous External Preparations" are described cataplasms, fomentations, plaster-mull, plasma, escharotics, pastes, paints, collodion, drying liniments, glycero-gelatins, pencils or crayons, salve pencils, spongiopiline and moxa. Specimen combinations are here given and they afford the physician an endless variety of prescriptio . There is, besides, much valuable information on writing prescriptions, incompatibilities, etc. In plasters, however, the author describes the commercial manufacturer of rubber plasters without referring to the far more valuable therapeutically official plasters made of the adhesive plaster of the new Pharmacopeia, which any physician may use to advantage.

NERVOUS AND MENTAL DISEASES. By Archibald Church, M.D., Professor of Nervous and Mental Diseases and Medical Jurisprudence in Northwestern University Medical School, Chicago; and Frederick Peterson, M.D., President of the State Commission in Lunacy, New York. Fifth edition, revised and enlarged. Octavo, 937 pages, 341 illustrations. Cloth, $5.00 net. Philadelphia: W. B. Saunders Co., 1905.

The preface states that practically no very material changes have been made in the arrangement or descriptive text, though the work as a whole has been carefully revised and many brief

interpolations made to improve the subject-matter. This is more strictly true of the section on nervous diseases. The changes are more notable in Dr. Peterson's section on mental disorders. In the former editions the old-style classification of the classic types of mania, melancholia, dementia, etc., was retained almost intact, notwithstanding the fact that the ideas of the Heidelberg school had already begun to tinge the ideas of many American psychiatrists. In this edition Dr. Peterson has included Kraepelin's species of "maniac-depressive" insanity and "dementia præcox," though not according them exactly the same limits and extension as is done by Kraeplin and his followers. He also retains the old forms of mania and melancholia, in which, especially as regards the latter, he will probably find many practical alienists in cordance with him. Dr. Adolf Meyer's elaborate essay on the recent problems of psychiatry is retained in this edition and furnishes a valuable exposé of the modern European views. The book as a whole will deservedly retain the public favor with which the former editions were received.

RADIOTHERAPY IN SKIN DISEASE. By J. Belot, with a Preface by L. Brocq. Translated by W. D. Butcher, M.R.C.S. Authorized translation from the Second French Edition, with thirteen plates and twenty-eight Illustrations. Cloth. Pp. 463. New York: Rebman Company, 1905.

The first part of this book is a historical review of radiotherapy; production of x-rays, including sources of electricity, the various currents, tubes, etc.; methods of exact measurement, and the theory of the Roentgen rays. Part II deals chiefly with the biologic effects of rays and the method of application. Part III takes up the treatment of various diseases. From the descriptions given, the apparatus and technic seem rather complicated. The quantities of rays used are expressed according to the units of the Holzknecht chromoradiometer. The work will be of more value to specialists in electrotherapeutics and dermatology than to the general practitioner.

AROUND THE WORLD VIA INDIA. A Medical Tour. By N. Senn, Ph.D., LL.D. Cloth. Pp. 347. Chicago: American Medical Association Press, 1905.

This book consists of a series of most interesting letters, written by Dr. Senn while traveling, which first appeared serially in THE JOURNAL. Beginning with Hawaii, Dr. Senn describes the manner and customs of the peoples, with diseases peculiar to the various countries visited. He writes instructively of the leper colony in Hawaii, giving an eloquent tribute to the work of Father Damien, and describes the condition of medical education in Australia and in India. He speaks highly of the work done by the men of the Indian Medical Service, especially in regard to research work in cholera and plague serums and antivenin. This book is well illustrated, showing characteristic people, buildings and scenery.

DEVELOPMENTAL PATHOLOGY. By E. S. Talbot, M.S., D.D.S., LL.D. First Edition. Cloth. 265 Illustrations. Chicago: Published by the Author, 1905.

Dr. Talbot has gathered in this volume articles which he has written on various phases of the subject treated and which he has published from time to time in various medical and dental journals. The contents of the work indicate the extent of the author's research, not only in stomatology, but over a wide field of medical subjects, and embody the results of thirty years' labor. The subject of evolution was little understood thirty years ago, and these various articles prove the accord with that theory shown in most of the deformities of the human body.

LECTURES ON AUTOINTOXICATION IN DISEASE, or Self-Poisoning of the Individual. By Ch. Bouchard. Translated with a Preface and New Chapters Added by T. Oliver, M.A., M.D., F.R.C.P., Professor of Physiology, University of Durham. Second Edition. Cloth. Pp. 342. Price, $2.00 net. Philadelphia: F. A. Davis Co., 1905.

This book is about twice as large as the original volume by Bouchard which bore the same title. It has been rewritten by Thomas Oliver, who made the original translations. The new matter has been interpolated and added to the old. In its present form it contains the numerous additions which have been made to medicine in the field which it covers.

ATONIA GASTRICA (Abdominal Relaxation). By A. Rose, M.D., and R. C. Kemp, M.D. Cloth. Pp. 203. Price, $1.00 net. New York: Funk & Wagnalls Co., 1905.

This work treats an important subject in a superficial way. It would be of greater use to the general practitioner were there fewer digressions into the field of etymology. A large part of the book is devoted to reports of cases in which the patients were treated by a plaster bandage devised by one of the authors. Methods, new and old, of diagnosing this condition are briefly related.

Therapeutics

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns.]

Veronal.

Veronal as a hypnotic has come into use more and more within the past year or two, especially in the treatment of insomnia due to functional nervous disturbances, such as neurasthenia, hysteria, etc. It is best given in doses of from 5 to 7½ grains (.30-.50) each, and prescribed in the powder form. The sleep that it induces undoubtedly more nearly approaches the normal sleep than that produced by other hypnotics of the same class. Its advantages, therefore, lie in the fact that the usual drowsy feeling which the patient complains of during the day following the taking of bromids or sulphonal, are usually absent. In the experience of reliable authorities, patients state that the sleep thus produced is almost a natural sleep, and a refreshed feeling is observed after the patient awakens. With this preparation, as with all other hypnotics, however, there are a number of cases on record of poisonous effects produced by taking this preparation in too large doses. In THE JOURNAL, February 17, page 550, it is noted that poisoning from veronal took place after the ingestion of 4.5 grams (68 grains). The same symptoms of nausea, vomiting, headache and somnolence have been observed after the self-administration of 75 grains (5.00) of chloralamid by a patient who was endeavoring to secure sleep after a prolonged debauch. The preparation was the elixir of chloralamid, taken in teaspoonful doses every few minutes, which was probably because of the presence of the alcohol in the mixture.

The "Practical Medicine Series" recommends veronal in the treatment of insomnia due to epilepsy, general paralysis, neurasthenia and hysteria. It is recommended that it be given in warm water on retiring. Its action is rapid, and within half an hour a quiet, natural sleep, without disagreeable prodromal sensations, is experienced. The duration of sleep from administration of from 5 to 7½ grains (.30-.50) of this preparation was six hours. The patients, according to this authority, do not establish a toleration for the drug or become accustomed to it. The circulation and the digestive systems are not disturbed, and the secretions of the body show no modification. The precaution, however, is given of observing the state of the liver and kidneys before its administration. Spielmeyer, in the same periodical, regards veronal as a hypnotic of value, given in gram doses (grains 15) at bedtime. Other authorities finds its taste less disagreeable than that of chloral, paraldehyd or dormiol, and its action superior; at the same time, it does not show the cumulative action of sulphonal and trional. Patrick endorses this preparation as a very commendable one, and has used it a great number of cases, and has not observed an instance of decidedly unpleasant effects. He regards the dose of ½ gram (grains 7½) as sufficient in mild cases, and even 5 grains will be effective in such cases. He regards 15 grains as a dose which may be given without hesitation when it is deemed necessary, although he states that some somnolence and slight dizziness may be noted the following day. He quotes one case in which 30 grains were given by mistake, and the only ill-effect was very prolonged slumber, followed by some dizziness and uncertainty on the feet.

D. R. Brower usually prescribes it in doses of 5 grains (.30) each, and in preference to increasing the dose of veronal he

combines with it codein in doses of from 1/4 to 1/3 grain (.015-.02), and he prefers this preparation in the ordinary cases of insomnia to the bromids or even to chloralamid, which he formerly used in preference to the other hypnotics, on account of the fact that it had no depressing effects on the heart or circulation.

Gastric Ulcer.

In the treatment of gastric ulcer William Van V. Hayes, in the *New York State Journal of Medicine*, states that when there are repeated severe hemorrhages with cicatricial obstruction, or when there is a carcinoma engrafted on the ulcer, that a competent surgeon should be consulted. If the case is a medical one he recommends rest in bed, usually for four or five weeks, allowing a week or two, if possible, after the abnormal signs and symptoms are controlled. During the first few weeks of rest in bed the patient should not be allowed to sit up in bed for any purpose. The alimentation should be by the bowel, especially in the more severe cases. It is necessary to vary the food according to the needs of each particular case. In other cases milk may be given in quantities of from one-half to one glass every two hours. It should not be very hot nor ice-cold, and should be combined with two ounces of Vichy or lime water. If milk is not well tolerated, the whites of two eggs, beaten up with water, and two ounces of beef juice may be given alternately every two hours. This should be continued for a period of about ten days, until the symptoms are under control, when he recommends strained gruels, the fine wheat cereals or chicken broths, soft boiled or lightly poached eggs, and bread a day or two old. After a few weeks the patient may be allowed a general diet. Rectal feeding should be employed for one or two weeks in the hemorrhagic and severe cases. Cleansing enemata should be given one hour before the nutrient enemata are administered. The latter should be given through a long tube with side openings, and during its administration the patient's hips should be raised on a pillow. Pressure should be made against the rectum so as to retain the enema for twenty minutes, and the patient should be instructed to maintain the same position for from half to one hour. He recommends the following combination for nutrient enemata:

Milk peptonized	5 ounces.
Yelk of egg	1
Claret	1 tablespoonful.
Prepared cereal food	1 tablespoonful.
Salt	15 grains.
Or Milk	4 ounces.
Water	1 ounce.
Eggs	2
Salt	15 grains.

The milk and egg in this preparation may be predigested with pancreatin, 5 grains, and sodium bicarbonate, 15 grains.

Place the receptacle containing this mixture in a wooden bucket containing water as hot as can be borne by the hand, and allow it to remain for one hour. One tablespoonful of arrowroot made into a paste may be added before predigestion.

Another combination similar to the following is recommended as an enema:

Liq. peptones	1 ounce.
Water or peptonized milk	5 ounces.
Salt	15 grains.

If the bowel is irritable, from 3 to 5 minims of the tincture of opium may be added to each enema. In order to control bleeding from the stomach, if present, the nitrate of silver may be given in one-fourth grain doses in half an ounce of water, every morning when the patient awakes, for a period of about ten days, after which bismuth subnitrate may be given in 60-grain doses at bedtime, and continued, if necessary. To counteract the hyperacidity, which is irritating to the ulcer, the following combination is recommended by the author:

℞.	Bismuthi subcarbonatis	grs. iii | 20
	Sodii bicarbonatis	|
	Magnesium bicarbonatis, āā.	gr. v | 30

Fiat pulvis No. 1. Sig.: To be given fifteen minutes after food.

In cases of severe hemorrhage, the essential treatment is absolute quiet, hypodermic injection of morphin sulphate, gr. ¼, combined with atropin sulphate, gr. 1/150, and adrenalin chlorid (1-1,000), 30 drops, diluted in water and given by the mouth. An ice-bag or cold compress should be applied to the epigastrium. If necessary, one pint of warm normal saline solution may be given by the rectum or hypodermically. Nutrient enemata may be resorted to after twenty-four hours.

For the resulting anemia in these cases he prefers the liquid preparation of iron, that is, the tincture, in from 10 to 15 drop doses (.65-1.00), in albumin water, and taken through a tube three times a day.

Formaldehyd in Internal Diseases.

J. Zwillinger, in an abstract in the *British Medical Journal*, recommends the administration of formaldehyd internally in cases of sore throat, catarrh of the bladder, erysipelas, scarlet fever and diphtheria. In almost every case favorable results were obtained. He recommends that it be given in the form of mint tablets, each of which contains 1 centigram of formaldehyd. In such a way the formaldehyd is set free in the mouth as the tablet dissolves, and exerts a direct disinfectant and bactericidal action, consequently it is well to instruct the patient to keep the tablets in the mouth as long as possible. He administered these tablets once every hour until five tablets were taken, when the interval between the doses was increased to two hours until the temperature became normal, and then one was given every three hours. This was the dose given to children of ages varying from 5 to 10 years. He speaks of administering it in ten cases of diphtheria as a substitute for the local treatment by disinfectant gargles, and in some of the milder cases antitoxin was not administered. In all these cases improvement was rapid and diphtheritic paralysis did not occur in any. He regards it as of value in the treatment of cystitis, which may be due to gonorrheal origin or spinal conditions.

Medicolegal

Osteopaths Are Practicers of Medicine.

The Supreme Court of Alabama says that the case of Ligon vs. State was tried on an agreed state of facts similar in all essential respects to the case of Bragg vs. State, 134 Ala., 165, in which it was held, June 28, 1902, that the practice of osteopathy was the practice of medicine within the meaning of the code provisions of that state. It says that the object of the appeal in this (Ligon) case was to have the Bragg case overruled. Counsel said, in brief: "It is respectfully submitted that on review of the point involved this court should not affirm the correctness of that decision, but should depart from it." The court's answer is that the decision in that (Bragg) case was unanimous. It covered all of the questions here involved, after careful and mature consideration. The court has re-examined it, and on reason and the authorities cited it has been unable to conclude that it is wrong. It should not, therefore, be overruled. The court can add nothing new in this decision to what was there said. To attempt it would be to go over the same grounds with inability to shed new light on them.

Liability of Wife for Medical Care of Husband.

The Supreme Court of Washington says, in the case of Russell vs. Graumann, an action brought by a physician, that a statute of that state provides: "The expenses of the family and the education of the children are chargeable on the property of both husband and wife, or either of them, and in relation thereto they may be sued jointly or separately." That ordinary medical aid and advice for the wife create family expenses has been repeatedly held. The husband is a part of the ordinary family, and under a statute providing in general terms for liability for "expenses of the family," as does the statute above quoted, the court sees no reason why medical and hospital services rendered to a husband are not as fully comprehended in the statute as are those rendered to a wife. Assuming that in this case the wife may not at any time have been with her husband in

the city of Spokane, where he had resided for about three years pursuing his occupation as a painter, it did not follow from that fact alone that the family relationship had in a legal sense been severed. It is not necessary that the husband and wife shall at all times reside together under the same roof in order that the legal status of the family may be preserved. It is a matter of common knowledge that many husbands in their struggles for a livelihood are often required to be far from home and for long periods of time, and that such enforced absences are in behalf of the family, in order that the comforts of life may be provided for them. Such absence may be a strong evidence of affection and regard for the family, rather than otherwise. It will not do to say that in such cases the family status is destroyed by somewhat continued absence of the husband.

Presumption of Death from Circumstantial Evidence.

The Supreme Court of Kansas says, in Modern Woodmen of America vs. Gerdom, that it is true that death may be proved by circumstantial evidence, and that absence for a considerable period of time is not indispensable in order to generate a satisfying conviction of the fact. But in all such instances the death of the absent party must fairly be demonstrated by the circumstances of the disappearance. If, for example, in connection with other facts showing a want of motive for absence, it should appear that the missing person was on a vessel which foundered or a train which was wrecked, or engaged in some hazardous enterprise, or met with an accident which might be expected to result fatally, or was exposed to perils incompatible with his age or the state of his health, or was afflicted with a fatal disease, or was mentally infirm, or was suicidally inclined, belief in the fact of death might be forced on the mind very soon after the disappearance. And in some cases the age, health, disposition, moral character, domestic relations, social rank and financial condition of one who suddenly disappears may themselves, without the aid of other circumstances, stifle all doubt that the person is dead. Such, at least, is the view of most of the courts of last resort. But in all the cases enumerated, lapse of time is in a measure a subsidiary matter. There must be a sufficient opportunity for investigation and search, and after the expiration of a period ample for those purposes further stretches of duration without tidings may confirm the inference of death. But the strength of the induction lies in the cogency of the circumstances of the disappearance and not in the fact of absence long protracted. The social aspects of our civilization have been almost revolutionized since the presumption based on the fact of seven years' unexplained absence was adopted. The presumption of death from absence can not have the strong probability of fact as its basis which formerly supported it, and persons who, for their own profit, assume the burden of establishing in courts of justice that the death of an individual has occurred have little excuse for urging their own isolated ignorance of his fate or his whereabouts as the principal item of their proof.

Power of Claim Agent to Employ Physician.

The Kansas City Court of Appeals affirms a judgment in favor of a physician, the plaintiff in the case of Reynolds vs. C., B. & Q. R. Co. It says that a passenger named Coffey was injured, May 20, 1902, in a wreck near Albany, Mo. The agent of the station caused him to be moved to a hotel in said town and sent for physicians to attend his injuries. About five days thereafter Coffey sent for the plaintiff, his family physician, to consult with the physicians already in attendance in reference to his treatment and removal to his home in King City. Previously, however, a stock agent of the railroad company had been to see Coffey and had consulted with the physicians in attendance, and had joined in the request of Coffey for the plaintiff for said consultation. The plaintiff treated Coffey for his injuries for about thirty days while he was at Albany, when he was removed to his home in King City, after which time he was his regular attending physician. On the 8th day of July one Wood, who claimed to have authority to adjust claims against the railroad company for personal injuries, saw Coffey at King City and made inquiries as to the kind of care he was receiving and the treatment that the plaintiff was administering to him. Wood saw Coffey more than once after he was moved to King City, at one of which times, when the question came up who was to pay the plaintiff for his services, he said: "We pay all bills." At one time the plaintiff had a conversation with the station agent of the company at King City, in which he said to the agent that he was not satisfied with the progress made by Coffey and that he wished a consultation in the case. The agent referred him to Wood, and Wood came to King City. Coffey compromised his claim against the railroad company for $2,500, but in so doing he did not include the medical bill of the plaintiff. At the time of the compromise the plaintiff was summoned to St. Joseph, where the compromise was consummated. He was sent for to confer with the company's general physician and surgeon and other physicians in reference to Coffey's injuries. Wood, for his services and expenses in that matter, as agent of the company, allowed and paid them. But in this case for services, as above stated, which resulted in a verdict in the plaintiff's favor for $478, the railroad company contended that there was no evidence to show that Wood or any one else had authority to bind it for the payment of the plaintiff for his services so rendered. The court, however, says that the evidence here tended to show that said agent was acting within the scope of his authority when he employed and agreed to pay the plaintiff for his attendance on Coffey. The acts of said agent in visiting the injured, employing physicians and consulting with them in eference to their condition and treatment, taken in connection with the acts of the company in paying for the services of such physicians, was proper evidence to go to the jury, and was sufficient to support the finding that said Wood, when he employed and agreed to pay the plaintiff for his attendance on Coffey, was acting within the scope of his authority. The said Wood appeared to have been put forward as a general agent in looking after such persons, and was placed in a position where others were justified in the belief that his powers were general in that respect, and whatever restrictions there may have been imposed on said agent as between him and the railroad company could have no effect on the rights of third persons, who had no knowledge of the restrictions or limitations on his apparent authority. The court is of the opinion that, as agent of the railroad company to settle claims against it for personal injuries, he was within the scope of his authority in agreeing to pay the plaintiff for his services as physician for Coffey, and, as it was necessarily a part of the latter's claim for damages, it was immaterial whether this agreement to pay was made with the plaintiff or with Coffey, and it was also immaterial whether he employed the plaintiff to render the services in the first place.

Current Medical Literature

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia, Pa.

February 17.

1 *Puerperal Infection. E. McDonald, New York.
2 *Congenital Malformations of the Heart. A. G. Ellis, Philadelphia.
3 *Cleansing of Milk Vessels; Relative Value of Washing Powders. A. H. Stewart, Philadelphia.
4 *Facts About Eating. J. W. Achron, Boston.
5 Typhoid Fever; How Can It Be Eliminated? J. L. Heffron, Syracuse, N. Y.
6 *Abscess of Antrum Causing Symptoms of Acute Articular Rheumatism. K. K. Wheelock, Ft. Wayne, Ind.

1. **Puerperal Infection.**—McDonald reports six cases of which a careful study was made. She found that while streptococcus infection is usually the most common and severe type of infection, other organisms, which usually produce clinically mild symptoms, may produce a severe type of this disease with a fatal termination. She urges that the term puerperal infection should be broadened to include inf ction elsewhere than in the uterus, and that the location and nature of such lesions should be recognized before any operative measures are undertaken. The presence of pathogenic micro-organisms in the genital canal is by no means sufficient evidence on which to base a diagnosis of puerperal infection.

2. **Congenital Malformation of Heart.**—Among 3,875 autopsies performed at the Philadelphia Hospital during the past

thirteen years Ellis found 46 cases of cardiac malformation. Four cases are described at length. One is a case of the rare condition of pectoral heart with divided sternum; the child was a full-term male and lived twenty-three and a half hours. A second case is one of transposition of the aorta and pulmonary artery, the child living thirty-four days. The third and fourth cases are instances of perforate interventricular septum and absence of anterior portion of auricular septum, respectively.

3. **Cleansing of Milk Vessels.**—Stewart commend a method which consists of washing the bottles and cans by a powerful stream of some hot washing powder solution with rapid solvent power pumped into the bottles, which are then rinsed with boiling water. This method cleanses 95 per cent. of the bottles perfectly. Stewart urges the establishment, under supervision of the bureau of health, of can-washing and cleansing buildings where all cans may be sterilized before they are sent to the farms. The advantages of such a scheme would be: 1, Saving of milk which is now destroyed by rapid fermentation due to infection from dirty cans; 2, saving of ice used to preserve milk which is eventually lost; 3, saving of time; 4, abolition of the use of preservatives; 5, saving of space for the storage of empty cans; 6, increased sale of milk due to restored confidence in its purity; 7, saving of the lives of thousands of children who are now fed on fermenting milk, the food value of which has been lost; 8, prevention of epidemics of dysentery and other milk-borne diseases.

4. **Facts About Eating.**—Achorn inclines to the belief that many conditions, such as arteriosclerosis, rheumatism, asthma, eczema, neuralgia, etc., are caused by overeating, by too much eating of one kind of food, by taking meals too close together, by nibbling between meals, by taking too much liquid during or immediately after eating, and by not chewing food sufficiently. No more food should be taken into the body than is required by the physiologic needs of the system.

6. **Abscess of Antrum Causing Rheumatism.**—Wheelock reports a case of pneumococcus infection of the antrum which was followed by general symptoms of acute articular rheumatism. The patient, a woman, had been suffering from a "cold in the head" with free discharge from the right nostril from the beginning of the attack. The frontal sinus was washed by means of a cannula, and on the following day she had a severe chill which was followed by rise in temperature and she was confined to her bed for twenty-four hours. Later she had severe pain in right knee, left elbow and shoulder. This pain and tenderness lasted about forty-eight hours. The second day following the chill the temperature was 100 F. From the first pus could be seen between the anterior end of the middle turbinate and the external wall of the right naris. Exploratory probe puncture was made and two teaspoonfuls of thick pus worked out, which showed pneumococci. Following the flushing of the antrum the naris was free from pus. Pain returned on the following day, when the antrum was again flushed and about one teaspoonful of pus brought away. Patient made a rapid recovery following the last lavage and regained the weight which she had lost during her illness.

Boston Medical and Surgical Journal.

February 15.

7 *Serious Head Injuries and the Indications for Operative Treatment. B. Sachs, New York.
8 Head Injuries. M. Prince, Boston.
9 *Indications for Operation in Head Injuries. W. N. Bullard, Boston.

7. **Indications for Operative Treatment of Head Injuries.**—As the result of an extensive personal experience with head injuries, Sachs has arrived at the conclusion that if there is an extensive injury to the skull, particularly in the parieto-temporal region, whether it be fracture or fissure; if there is evidence of splintering of the inner table, or of the presence of a foreign body or of persisting intracranial hemorrhage, operative interference is warranted at the earliest possible moment. (*X*-ray examinations and lumbar puncture are valuable diagnostic aids). In comminuted fracture of the skull the surgeon must decide whether or not the danger of infection is increased by surgical procedures. Surgical technic and surgical methods should be developed to such a degree that the brain and skull will be handled with as much skill as are the abdominal viscera. In all cases, but especially in those in which external injury can not be considered the determining factor, the question of surgical interference must be decided on purely neurologic lines. Sachs does not approve of continuing the discussion of the differentiation between concussion, contusion and compression. He says that it is much more important to decide whether the brain has or has not been injured tangibly; and if injured, whether the site of the injury is on or near the surface; in short, whether or not it is accessible. If inaccessible, simple trephining may be resorted to, provided there are symptoms of increasing intracranial pressure which can not be relieved by lumbar puncture or by other simpler methods. Even if the injury is in an accessible region, it is best to adopt a conservative attitude and to determine whether we may trust to surgical skill rather than to the reparative powers of nature. Hemorrhages are often absorbed and many inflammatory processes recede more or less spontaneously. In determining the gravity of brain injury Sachs considers disturbances of cardiac and respiratory action, of vesical and rectal control, and the condition of consciousness as the most important symptoms. These are the manifestations of increasing intracranial pressure and of other serious injury. Recovery from coma, however slight, after twenty-four, forty-eight or seventy-two hours, is encouraging; deepening coma is of grave significance. The behavior of the pupillary reflexes is of no special value in deciding the question of operative interference. If the symptoms point to distinct focal lesion, although years may have elapsed since the initial injury, surgical measures must be adopted, providing only that the lesion be accessible. If the external injury points to one site and the symptoms to another, Sachs advises considering both, attacking the site of external injury first, but trying to reach the other as well.

9. **Id.**—In all cases of compound fracture of the external surface of the cranium in adults, Bullard advises immediate operation. In cases of simple fracture he considers it safer to operate in all cases in which there is clear external evidence of fracture, although in children it is sometime permissible not to operate when no symptoms exist. He also advises operating on all depressed fractures; in all cases in which symptoms of little meningeal hemorrhage exist; and when unconsciousness comes on after an interval of consciousness following injury to the head; in adults, whenever the unconsciousness after a severe injury lasts more than twelve hours, and when it is evident that the unconsciousness is due to the injury and not to other causes; when persistent unilateral convulsions follow injury to the head in an adult, provided that such convulsions never occurred previous to the injury and that no other cause for them exists. Inequality of the pupils occurring immediately or shortly after injury also is an indication for operation. Slow pulse, with other symptoms, is an indication for operation; rapidity of the pulse is not a contraindication, although weakness of the pulse may be.

Medical Record, New York.

February 17.

10 *Teacher's Part in the Tuberculosis Problem. S. A. Knopf, New York.
11 Necessary Principles in the Diagnosis of Surgical Conditions of the Upper Urinary Tract. J. B. Clark, New York.
12 Administration of Diphtheria Antitoxin and Performance of Intubation by the Department of Health of New York City. J. S. Billings, Jr., New York.
13 *Non-operative Treatment of Prostatic Hypertrophy. W. S. Reynolds, New York.
14 *A Factor in Perineal Lacerations. W. H. Shipps, Bordentown, N. J.

10. **Teacher's Part in the Tuberculosis Problem.**—Knopf calls attention to some of the particular duties devolving on teachers in the struggle against this disease which so essentially attacks the masses. The pupils should be taught to love fresh air. Ventilation of class rooms should be ample. When the site of the schoolhouse does not permit of the possession of large playgrounds, a roof garden, which can be covered in winter, is absolutely necessary. Heating and general ventilation of these rooms should be of the most improved kind. The walls and woodwork of the school room should be plain and

easily cleansed. All corners should be rounded and the walls painted. The school furniture should be so arranged that it can easily be moved so that the floors can be thoroughly cleansed after each daily session. The hygienic drinking fountain should replace the drinking cup. A well-equipped gymnasium and a swimming tank with constantly running water, suitably warmed, should be the property of every public school. Every pupil should be taught to swim and should be given the opportunity to bathe several times during the week. Knopf says that teachers may do more toward the prevention of tuberculosis by teaching the children under their charge how to breathe, sit, stand and walk properly than the entire number of physicians taken together can accomplish. He gives a number of rules which he advises teachers to have printed on leaflets to be read and reread by the pupils, and explained and commented on by the teacher. These rules include common methods of prevention of the transmission of tuberculosis and refer to such subjects as spitting, coughing, sneezing, cleanliness of finger nails, and so on. He calls attention to the proper feeding of school children, and advocates the offering of school lunches at moderate prices. He shows the great danger lurking in alcoholic drinks, including patent medicines, which are in such common use among the masses. An important point, he says, in the prevention of tuberculosis among school children is that the school teacher should be familiar with the subjective signs and symptoms of tuberculosis and the characteristics of the person disposed to consumption. He believes in weeding out the tuberculous child and the tuberculous teacher from the public schools, but he also believes that we should provide for these same patients, both teachers and children.

13. **Non-Operative Treatment of Prostatic Hypertrophy.**—Reynolds, while admitting the necessity in many cases, holds that the patient should not be urged to operation until proper systematic treatment has been tried. In catarrhal prostatitis he employs massage at sufficient intervals to free the glands and to relieve the congestion, unless contraindicated in cases in which interstitial changes have taken place in the prostatic tissues. All alcoholic drinks must be stopped, and a careful watch kept on the urine. He considers that the best remedy for relieving the congestion is nitrate of silver, the application to be made with a rubber catheter attached to a small syringe. The solutions should be mild at first and increased or decreased in strength according to the effect produced. If considered advisable for the patient to use the catheter himself definite instructions should be given him as to the manner of doing so, and the method of keeping it clean. He considers that in cases of this kind the patients may lead comfortable lives, well satisfied with their condition: so well satisfied, indeed, that operation will not be considered.

14. **Factor in Perineal Lacerations.**—Shipps explains why violent and uncontrolled expulsive efforts of the mother just prior to the birth of the child play an important part in the causation of perineal rupture. The patient is worn out with the exertion which she has been making for hours, and which she believes to have been futile. She is anxious to see the end of her sufferings, and, listening to the advice of her friends, she uses all her reserve force and strains with all the energy of which she is possessed. Shipps believes that too short a time is given, as a rule, for the physiologic softening and stretching of the tissues. In his practice he encourages the woman in labor, assuring her that though the pains she is suffering are apparently accomplishing little, they are in fact surely preparing the way for the birth of the child. He, moreover, warns her of the approach of the period just prior to the delivery, when all bearing-down efforts must cease. The integrity of the perineum remains intact in proportion as control over the last expulsive efforts of the patient is secured. Shipps operates in every case of laceration, except the most superficial.

New York Medical Journal.

February 17.

15 *Treatment of Cerebrospinal Meningitis. O. T. Osborne, New Haven, Conn.
16 Newer Views of the Principles of Infant Feeding and How They May Be Applied. H. D. Chapin, New York.
17 Fracture of the Skull. G. T. Vaughan, Washington, D. C.
18 *Ossiculectomy Under Local Anesthesia in the Treatment of Chronic Suppurative Otitis Media. M. J. Ballin, New York.
19 Diagnosis of Chronic Urethral Discharges. S. L. Gans, Philadelphia.
20 Rheumatic Manifestations in Childhood. E. J. McDonough, New York.
20½ Oxaluria. H. H. Roberts, Lexington, Ky.
21 Tapeworm Simulating Appendicitis Recurrens. A. A. Gumbiner, New York.

15. **Treatment of Cerebrospinal Meningitis.**—According to Osborne, the treatment of this affection consists in diminishing congestion, in taking means to prevent or to relieve cerebral or spinal pressure, and in combating all acute symptoms and complications as they occur. He says that the administration of diphtheria antitoxin in cerebrospinal meningitis is theoretically unsound and practically a failure. Spinal puncture is indicated when there is cerebral pressure, but he is in doubt as to whether or not it is indicated for diagnostic purposes, except in rare instances. The almost constantly beginning sore throat should be treated with antiseptic gargles and sprays, none better, he thinks, than the hydrogen peroxid solution. Conjunctivitis should be treated with simple boric acid solution. A calomel or saline purge should be given, and painful joints should be wrapped with cotton and kept warm. Pain should be stopped with morphin, by the mouth or hypodermically, depending on the intensity. If the pain is not severe and there is no vomiting, and if the pulse is good, bromids or chloral may be administered for the first two or three days. To quiet cerebral excitement and delirium, and to intensify the action of the morphin which must be given, Osborne believes that there is nothing that will compare with ergot, given intramuscularly or subcutaneously. The frequency of its administration should be about once in six hours, unless there is great cerebral excitement or the pulse is bad. The ice-cap to the head and the spinal ice-bag are necessary. If the temperature is subnormal or the surface of the body is cold, dry hot applications are of advantage. The general care of the patient should be the same as in typhoid. Osborne is convinced that ice, ergot and morphin will save many patients from death from this disease. Alcohol, strychnin and quinin are contraindications, although the first two are permissible in an emergency.

18. **Ossiculectomy Under Local Anesthesia.**—Ballin believes that ossiculectomy may be performed in some chronic catarrhal conditions of the middle ear, especially when the hearing is greatly reduced, when the subjective noises are extremely annoying to the patient, and when all other means have failed. The operation is free from pain and is not accompanied by hemorrhage. The anesthetic used is a 1 per cent. solution of cocain to which is added an equal part of a 1 to 1,000 adrenalin solution. Twenty to thirty minims are sufficient to bring about the desired anesthesia. The instruments used and the method of operating are described in detail.

St. Louis Medical Review.

February 10.

22 Operative Treatment of Chronic Nephritis. (To be continued.) R. Guiteras, New York.
23 Estimate of Current Medical Literature. L. F. Bishop, New York.

Lancet-Clinic, Cincinnati, Ohio.

February 17.

24 *Oration in Medicine, Ohio Valley Medical Association. J. B. Marvin, Louisville, Ky.
25 One Year's Experience with the Local Application of Adrenalin in Diseases of the Skin. A. Ravogli, Cincinnati.
26 *Cancer of the Rectum. E. B. Smith, Detroit, Mich.
27 Bright's Disease, Diabetes Mellitus and Pulmonary Tuberculosis. B. F. Felch, Chicago.
28 Bronchitis and Bronchopneumonia in Children. W. A. Wood, Gallatin, Mo.

24. **Oration in Medicine.**—Marvin states that in his opinion the supreme test of the medical man is his possession of the ability to recognize disease in the individual and to treat it properly. Test-tube experiments, he says, should never outweigh bedside testimony. He states that Koch's discovery of the etiology of tuberculosis was epoch making, and that when he announced the discovery of tuberculin the medical world was on the tiptoe of expectancy. Behring's diphtheria antitoxin was discovered shortly afterward and since then many

serums have been presented to the profession, and many theories concerning the solution of the problem of infectious diseases have led astray even the elect. Many of these claims, Marvin says, are an abomination to science and a menace to educational progress. More recently the study of chemical products has been assiduously pursued, though unfortunately there has appeared to be some antagonism between the biologist, chemist and the clinician. Much of our literature has been burdened with laboratory jargon meaning anything or nothing, according to the reader's opinion. The manufacturing druggist and the dealer in proprietary drugs pander to our inordinate gullibility, and by the use of the name and garb of easily-coined pseudo-science lead many willing captives by the witchery of their eloquence and make some physicians facile fabricators of fiction and others quasi-indorsers of crass misrepresentations of chemistry and science. If we trust "the true-seeming lie," all that is necessary to compel Nature, however crippled, to resume labor and build up tissue, is to administer any one of a number of predigested, peptonized, malted or otherwise fake foods or pretentious tissue-builders, claiming to be competent therapeutic foods without the intervention of digestive effort; or some chemical compound so nearly protoplasmic as to build tissue itself without Nature's co-operation or consent. The trend of medical research, Marvin believes, is along the line of pathology, but the clinician should follow closely in its wake. Care and exactness in diagnosis are of prime and fundamental importance. A diagnosis may be etiologic, clinical or pathologic—in other words, an opinion based on the specific cause of disease in an individual case. Etiology and pathology have been unduly magnified and therapeutics is in danger of being forgotten. It has been claimed, but not corroborated, he says, that the various serums represent an era of specific therapeutics, but we must still use some of the empiric remedies. The claim is made that by the use of some favorite intestinal antiseptic—the golden calf of the manufacturing pharmacist—typhoid fever may be aborted or its course shortened. If physicians would carry their pathology with their therapeutics to the bedside, and realize that typhoid fever is more often a general bacteriemia than an intestinal disorder, and that in 80 per cent. of the cases the specific bacillus can be found in the blood, they would realize the absurdity of the claim that any of the so-called intestinal antiseptics can exert any appreciable influence over the twenty or more feet of intestine and the entire blood stream. Because glycerin is hygroscopic, it is but the counterfeit of science to claim that a paste of glycerin and fine clay applied hot to the chest will have any effect on a pneumonia, no matter how learnedly the manufacturing chemist may talk about osmosis. The injection of some fluid of unknown composition in tuberculosis smacks of quackery. A tyro in chemistry would laugh to scorn the claims about nascent chlorin and ozone. Water—the cheapest and commonest thing in Nature—is bottled, and the price of wine is paid for it, and we imagine it cures Bright's disease and diabetes. These are but examples of therapeutic optimism which needs to be shunned as much as therapeutic nihilism. In the treatment of disease the tendency is to over-treatment and meddlesomeness. In a disease that is self-limited and running generally a short course, the skill of the physician is taxed, and while prompt and energetic treatment may be necessary to save life, useless drugging and agencies applied internally, over-feeding and over-stimulation and over-handling or over-nursing are fraught with great danger. Fresh air, digestible food in small amounts, sleep—tired Nature's sweet restorer—and the treatment of symptoms as they arise are the beacon-lights in the management of this disease. The physician is the most misunderstood of men. Medicine is an art, a profession, and can not be judged by the standards of trade or business. If Nature be but evolution, mere cause and effect, she neither kills nor cures; she can be guided or misguided by the physician. In matters of life and health the physician utilizes or combats the forces of Nature. His best energies are always directed toward inhibiting the various conditions from which he gains his livelihood. He has no patents or trade secrets, no proprietorship in anything his colleague may not use for the benefit of humanity. He strives to prevent disease, to perfect measures to alleviate suffering, and through his societies, the medical press and libraries open to the public, he teaches the layman how best to dispense with the services of the physician. The physician should be a public servant as well as the servant of the individual. He is the apostle of health and healthfulness. He is the conservator of peace and happiness of society, the trustee of the health of the community.

26.—See abstract in THE JOURNAL, Nov. 4, 1905, page 1434.

Annals of Surgery, Philadelphia.

January.

29 Preservation of the Nerve Supply to the Brow, in the Operative Approach to the Gasserian Ganglion. H. Cushing, Baltimore.
30 *Operative Treatment of Cleft Palate. C. H. Peck, New York.
31 Acute Edema of the Lungs Secondary to Ether Narcosis. V. C. Pedersen, New York.
32 Excision of Portions of the Chest Wall for Malignant Tumors. E. Rixford, San Francisco, Cal.
33 Non-parasitic Cysts of the Spleen. C. A. Powers, Denver.
34 Perforation of the Gall Bladder. A. MacLaren, St. Paul, Minn.
35 *Value and Place of Duodenocholedochotomy in Gallstone Surgery. J. C. Hancock, Dubuque, Iowa.
36 Constriction of the Duodenum Below the Entrance of the Common Duct and Its Relation to Disease. A. J. Ochsner, Chicago.
37 *Anomaly of the Duodenum Resulting in Death After Gastroenterostomy. J. G. Mumford, Boston.
38 Resection of Intestine, Followed by End-to-End Anastomosis. E. Eliot, Jr., New York.
39 *Transverse Incision for the Removal of the Appendix. G. G. Davis, Philadelphia.
40 Radical Cure of Direct Inguinal Hernia. Id.
41 *Radical Cure of Severe Femoral and Inguinal Hernia. J. H. Nicoll, Glasgow.
42 *Radical Operation for Inguinal Hernia. J. R. Eastman, Indianapolis, Ind.

30. **Operative Treatment of Cleft Palate.**—Peck calls attention to certain points in technic which aid in securing prompt surgical closure of the cleft with a minimum amount of damage to the muscles of the soft palate. He believes that children of 6 or 7 years of age are the most favorable subjects for operation from the purely surgical standpoint. The very serious disadvantage is that habits of speech are already formed and the defect in pronunciation is more difficult to overcome. Peck invariably uses the hanging head, Rose position, intermittent ether anesthesia with an open cone, and the Whitehead gag. He never resorts to preliminary tracheotomy and does not believe that it should ever be necessary. The special instruments used are the Whitehead mouth-gag, a very slender knife for transfixing the edge of the flap, paring and splitting the edge of the uvula; a long, slender pair of mouse-tooth forceps; a strong, straight scalpel for making the lateral incisions; a thin, blunt periosteal levator, slightly curved on the flat; a sharply curved Deschamp's handle-needle for passing the heavier sutures, and his own special needle-holder and needles for the fine sutures. The edges are pared by transfixing the edge of the soft palate with a very fine, sharp knife and cutting first forward to the anterior angle of the cleft, then backward, bringing the knife out at the base of the uvula; the strip removed should be as narrow as possible to avoid waste of tissue, but the full thickness of the flap. The mucous membrane of the uvula is then split on its inner border, i. e., facing the cleft; it easily separates to give a sufficient raw surface and all of the tissue of the rudimentary half of the uvula is saved. The denudation is repeated on the opposite side of the cleft. The lateral incisions are now made, commencing opposite the last molar tooth close to the border of the gums and carried forward to a point opposite the anterior extremity of the cleft, but taking great care to leave a broad anterior pedicle to the flap for nutrition. This incision falls external to the posterior palatine foramen and the main trunk of the artery as it runs forward; the branches are first divided, the main trunk being usually torn by the periosteal elevator. In clefts running forward through the alveolar process Peck prefers to leave the extreme anterior end of the cleft for later closure rather than endanger the nutrition of the flaps by prolongation of the lateral incision and narrowing of the pedicle. The curved periosteal levator is then inserted in the lateral incision, and hugging the bone, is forced carefully through into the cleft; by lateral sweeps

the entire flap is quickly separated, including the muco-periosteum at the anterior angle of incomplete clefts. Posteriorly the instrument is strongly carried outward and backward along the posterior margin of the hard palate, and to a great extent detaches the palatine aponeurosis and the mucous membrane on the nasal aspect of the velum from the bone. In the majority of cases hemorrhage soon ceases to be troublesome after this blunt separation; posterior branches of the descending palatine artery remain uninjured for nutrition of the posterior portion of the flap, even after very free separation with the raspatory. The inner edge of the flap is then seized with mouse-tooth forceps at the base of the soft palate, i. e., where the muscular pull concentrates, a thin, straight bistoury is inserted through the posterior part of the lateral incision, and cutting outward and backward as traction on the flap is made toward the median line, the detachment of nasal mucous membrane and palatine aponeurosis from the posterior border of the hard palate is completed, and by a careful sawing motion enough of the mucous membrane of the nasopharynx is divided to allow the edges of the flap to fall to the median line without tension. Few, if any, of the fibers of the bellies of the levator or tensor palati are cut. The palatine aponeurosis which receives the insertions of the tensor and levator is completely detached from the posterior border of the hard palate as far outward as the base of the hamular process, together with the mucous membrane on the nasal aspect of the soft palate, allowing the velum to drop downward. This aponeurosis with its muscular insertions remains in the flaps. In cases of wide cleft, tension on the flaps is still caused by the shortened salpingo-palatine fold of mucous membrane running upward and backward on the lateral wall of the pharynx along the belly of the levator palati. Peck says that free division of this fold by gently tearing with the finger or snipping with blunt curved scissors as traction is made on the flap downward and inward to make it prominent, is easily accomplished without damaging the muscles, and effectually relieves tension. All this can be done without unduly narrowing the bridge of tissue behind, or endangering the nutrition of the flap. By this time the hemorrhage has nearly ceased and the flaps are ready for suture. Beginning close to the base of the uvula, sutures of iron-dyed silk, No. 6, are passed on the Deschamp's handle needle through the entire thickness of both flaps at a sufficient distance from the edge to guard against cutting through; these are left untied until the last is passed, four or five being usually sufficient, placed from one-fourth to one-third of an inch apart. They are then tied in order, with a surgeon's knot, usually beginning with the posterior stitch, the ends being left long for the time. Intermediate stitches of iron-dyed silk, No. 3, are then placed between each of the heavier stitches, and two or three in the uvula itself, the last at its tip or even on the nasal aspect. They are passed on the very fine special needles with the eye in the point, carried on the special needle-holder; they include only part of the thickness of the flap, are closer to the edge, are tied immediately and insure accurate apposition of the edges, such as is aimed at in all fine plastic work. Five to seven of these are used, making in all ten or twelve sutures. The long ends of the heavier sutures are used for traction and steadying the flaps during the passage of the fine sutures, especially in bringing the uvula forward. Each, as it has served its purpose, is cut short. In the treatment of the lateral incisions Peck uses a device suggested by C. H. Mayo; a piece of white tape is passed around both flaps through the lateral incisions, drawn just tight enough to approximate the flaps slightly and guard against tension, and secured by a silk ligature. The ends are cut short and slip around to the nasal surface of the flaps. This is left in place seven days and serves for drainage as well as for the relief of tension.

35. **Value of Duodenocholedochotomy.**—Hancock states that in favor of duodenocholedochotomy for gallstones in the lower end of the common duct are: (a) the avoidance of drainage some cases in which one would not otherwise wish to sew up the wound in the duct and close the abdomen; (b) the greater ease in sewing the duodenal than the duct incision by virtue of size and proximity of the former; (c) uniformly kindly healing of intestinal wounds; (d) easy and natural access to common duct; (e) ease and benefit of dilatation of papillary orifice in insuring better drainage of bile and detritus; (f) duct may be safely incised for half an inch in extracting stone or in enlarging the orifice for drainage. Against the procedure has been raised the common prejudice against opening the gut in general, the fear of fistula which occurred in but two out of 62 cases, and the dread of infection which, as indicated above, has been vastly overrated in regard to the upper half of the intestines. In neoplasm of the papilla this route is clearly indicated for diagnosis and treatment when the growth is amenable to local treatment and the gall bladder can not be used for anastomosis or drainage. In total stenosis of the papillary orifice, whether from neoplasm or trauma of stones, a choledochoduodenostomy could be done with the incision employed in duodenocholedochotomy, where the anastomosis could be made low down in the comon duct. In pancreatic stone a duodeno-pancreo-lithotomy is an established procedure and for good anatomic reason is the method of election.

37. **Anomaly of Duodenum.**—Mumford cites the case of a young man who had suffered severely with gastric symptoms for five years. It was obvious that he had a greatly dilated stomach. An immovable mass about the size of a pigeon's egg could be felt in what was thought to be the pyloric region. It was assumed that this mass was of inflammatory origin and a drainage operation was advised. On opening the abdomen Mumford found that a large part of the pyloric portion of the stomach was greatly thickened, and was held up to the liver by strong and dense adhesions. On turning up the omentum, colon and stomach and searching for the jejunum, Mumford found that that portion of the gut did not spring from the ligament of Treitz on the left crus of the diaphragm, but from the right crus. In other words, the fixed duodenum ended on the right of the spinal column. Little was thought of this anomaly at the time. A short-loop posterior gastroenterostomy was done, the opening in the stomach being made as near the pylorus as possible, and the opening in the jejunum about three inches from the ligament of Treitz. All went well until the fifth day after the operation, when the patient complained of some epigastric uneasiness. Later on the same day he underwent a sudden and violent paroxysm of severe abdominal pain, associated with profound and alarming collapse. Death ensued on the sixth day. The autopsy disclosed the abdominal cavity flooded with gastric contents. A large rent was found in the fundus of the stomach.

39. **Transverse Incision in Appendectomy.**—Davis employs two incisions, each being designed to avoid wounding arteries, and to make the appendix easily accessible. For easy cases the incision is made directly transverse, one and a half inches long. Its center is to be on the semilunar line on a level with the anterior superior spine. The aponeurosis of the external oblique is divided in the line of the skin incision, but obliquely to the direction of its fibers. The fibers of the internal oblique and transversalis muscles are parted—not cut—in the same line as the structures above. The peritoneum is then opened and the incision carried inward through first the anterior layer of sheath of the rectus. A blunt retractor three-quarters of an inch wide is then inserted and the muscle drawn toward the median line. This exposes the transversalis fascia and peritoneum posteriorly which are then also divided. Thus is obtained a triangular opening with its base of three-quarters of an inch and two sides of about an inch long, which is ample for simple cases. If the case is a difficult one, the outer end of the incision is prolonged to the anterior spine or even above and inwardly through the sheath of the rectus to within an inch of the median line. This will give an opening from four to five inches long, according to the size of the patient, sufficiently large to insert the hand if necessary, and through which the appendix can be extracted under almost all circumstances. In cases in which drainage is necessary, the drain is brought out at the angle of the wound and lies close to the bony anterior superior spine and passes through the thick muscular mass of the internal oblique and transversalis, all of which insures against the formation of a hernia at that point. The inner portion of the wound is protected absolutely

against hernia by the rectus muscle, and to its outside there are the thick internal oblique and transversalis muscles beneath, and above them the aponeurosis of the external oblique. Davis says that the division of the external oblique aponeurosis obliquely instead of parallel to the direction of its fibers may be urged as an objection, but this is more than compensated for by the better access which is afforded. No hernias have come under his observation even in suppurative cases.

41. **Radical Cur of Severe Femoral and Inguinal Hernia.**—The method of operating described by Nicoll is applicable to both femoral and inguinal hernia. Its main features are: (a) the employment of the sac to form an intra-abdominal buttress over the internal aspect of the hernial opening or ring; (b) the use of the pubic ramus as a *point d'appui* in the process of closure of the hernial canal, and (c) the additional security of closure obtained by the superposition on the bone sutures of a plane of fascial sutures. The technic of the operation is as follows: Obliteration of the sac, also of the peritoneal depression over the abdominal aspect of the ring, and the substitution of a buttress over the internal aspect of the ring. The sac is exposed and cleared from surrounding tissues (the skin incision may be vertical or transverse). It is then opened longtudinally in its middle line, cleared of its contents, and separated from parts surrounding its neck, including the transversalis and the iliac fascia, for one inch round the abdominal aspect of the ring. Next, the sac is bisected longitudinally from fundus to neck, and an aperture is made in one half near the neck, and the halves are interlocked by putting the other through the aperture. In certain cases it lies better if previously twisted one-half turn on its longitudinal axis. Next, the whole sac is reduced through the femoral ring into the extraperitoneal space previously cleared for it by detaching its neck from the abdominal aspect of the ring. The sac thus lies bunched up within the abdomen, between the peritoneum and the transversalis and iliac fascia over the internal aperture of the femoral canal. When the sac is unnecessarily large part of it may be cut away before reducing it through the canal. An incision is carried (bone deep) from the femoral vein along the pubic ramus to the region of the pubic spine. This divides the pubic portion of the fascia lata, the origin of the pectineus, and the periosteum. Its length depends on the extent to which the femoral vein has been displaced outward by the presence of the hernia. The periosteum is then detached to a limited extent and retracted. The bone is drilled near its upper edge in two places, from one-half inch to one inch apart (one drillhole may be made to suffice). Through one of the apertures a loop of stout catgut or other absorbable ligature is passed, either by threading it in the eye of a curved surgical needle, or by pushing it through, simply doubled on itself. It is, however, more easily passed by threading it in the eye of the bone drill or in the eye of an ordinary surgical probe. For the purpose Nicoli employs a special probe in which the eye is small and placed very near the extremity of the handle. The loop of ligature is divided and one end is threaded in a large curved surgical needle and passed as a mattress suture through Poupart's ligament. Unthread it from the needle, repeat this with the second end, carrying it through Poupart's ligament at a higher level, avoiding the deep epigastric artery to the outer side, and, in male patients, the spermatic cord above. By means of the probe (into the eye of which the ends are threaded , both ligatures are withdrawn through the second drillhole in the bone. The ends of each loop are tied separately over the front of the bone, thus bringing Poupart's ligament down to the postero-superior surface of the bone and fixing it firmly in contact with that surface, constituting what is in effect an extension outward of Gimbernat's ligament, and absolutely closing the femoral ring to whatever extent may be desired, due regard being paid to the amenity of the femoral vein. The degree of occlusion is regulated by the position of the sutures in Poupart's ligament, but not by the tension with which they are tied. This latter does not vary, the knots being tied in all cases firmly to bring the ligament into contact with the bone. To make the closure doubly secure the operation is completed by uniting, by interrupted catgut sutures, the detached margin of the pectineal origin and the pubic portion of the fascia lata to the "anchored" Poupart's ligament.

42. **Radical Operation for Inguinal Hernia.**—Eastman has devised a method for introducing a single tier of non-absorbable sutures which coapt all the layers either according to Ferguson's or Bassini's methods. These sutures may be removed easily after firm union has taken place. In 11 cases Eastman has used heavy Pagenstecher celloidin linen. The manner of introduction of the sutures is simple. After incision down to the aponeurosis of the external oblique, exposing both rings, the overlying superficial tissues should be wiped with gauze from the aponeurotic layer to such an extent that Poupart's ligament may be freely exposed. After reduction of its contents the sac should be twisted on itself, as practiced by C. H. Mayo, so that all the slack of the peritoneum about the neck of the sac may be taken up before the transfixing suture is introduced. The Pagenstecher linen suture, bearing a needle on each end, is first passed through Poupart's ligament from without inward one inch from its free margin. It is then passed through the outer border of the internal oblique and transversalis muscles and brought back through Poupart's ligament about one-third of an inch nearer the margin of this ligament than its first point of passage. The needle, now external to and above Poupart's ligament, is made to overlap the free margins of Poupart's ligament and the aponeurosis of the external oblique by carrying the linen through in the form of a simple running mattress suture. The needle is next passed through the superficial fascia, panniculus adiposus and skin, emerging about one-eighth of an inch from the skin-wound margin on the side opposite Poupart's ligament. The needle on the tail end of the suture is brought up through the subcutaneous fat and skin on the side of Poupart's ligament. When traction is made on the two ends of the suture no kinks or curls remain, and the suture is tied up as a simple loop and, being clipped, may be drawn out with the slightest traction.

St. Paul Medical Journal.

February.

43 Music as a Therapeutic Agent. J. Knott, Dublin, Ireland.
44 Endocarditis in Children. T. Lowe, Pipestone, Minn.
45 *Fracture of the Clavicle. E. King, Fulda, Minn.
46 Surgical Technic. C. P. Thomas, Spokane, Wash.

45. **Fracture of the Clavicle.**—King has employed a number of dressings for fractured clavicle and finding none of them quite satisfactory, he now applies the following in most of his cases: Having removed the clothing from the chest, he applies a zinc oxid strip, of length and width suitable to the patient's size, placing the initial end at the inferior angle of the scapula, running it upward and outward over the top of the shoulder on the affected side, down under the axilla and then transversely across the back around the body to the midsternal line. The object of this strip is to fix the scapula, which King regards as the most important point in any method of dressing. Then he puts on a second strip, beginning at the free border of the ribs anteriorly, running it up over the tilted end of the inner fragment and down the back to several inches below the scapula. This assists in overcoming the pull of the sternomastoid. In suitable cases, when the patient is lean in flesh, small, tightly wadded rolls of cotton may be placed in the supraclavicular and infraclavicular fossæ before this second strip is applied; they will act as splints to the clavicle. Pads in the axilla, large and hard enough to overcome the inward pull of the pectorales and scapular muscles, can seldom be borne on account of pain and pressure symptoms; however, a small pad of gauze and cotton is useful in absorbing sweat and odor. A snugly fitting undergarment may now be put on. The dressing is completed by placing the hand and arm in proper position and applying a snugly fitting Velpeau bandage.

Interstate Medical Journal, St. Louis, Mo.

January.

47 *Annual Medical Progress Number.

47. **Annual Progress Number.**—For several years it has been the custom of this journal to review the progress made in medicine during the preceding year. The present issue con-

sists of 216 pages. The department of internal medicine, conducted by Dr. J. S. Myer, is devoted entirely to a consideration of some of the recent literature on diseases of the stomach. Dr. W. Bartlett, in charge of the department of surgery, devotes considerable space to physiologic surgery. Dr. A. E. Taussig discusses the contributions to laboratory diagnosis, particularly the methods dealing with the diagnosis of gastro-intestinal affections. Dr. W. Baumgarten, in charge of the department of therapeutics, reviews the advances made in serum therapy and roentgenotherapy, and also mentions the agitation against the evil of nostrum vending. The departments of pediatrics, pathology and bacteriology and obstetrics and gynecology, orthopedics, neurology and psychiatry, genitourinary surgery, laryngology and otology, dermatology and syphilis, and ophthalmology are also well taken care of by those in charge, making this issue a most valuable one for those who wish to know of the progress made in all departments of medicine.

Journal of Experimental Medicine, New York.

January.

48 Effect of Eosin on Tetanus Toxin and on Tetanus in Rats and Guinea-Pigs. S. Flexner and H. Noguchi, New York.
49 Physiology of Heart-block in Mammals, with Especial Reference to the Causation of Stokes-Adams Disease. J. Erlanger.
50 *Effect of Changes in Temperature on the Viscosity of the Living Blood. R. Burton-Opitz, New York.
51 *Experimental Cirrhosis of the Liver. R. M. Pearce, Albany, N. Y.
52 Experimental Arteriosclerosis. R. M. Pearce and E. MacD. Stanton, Albany, N. Y.
53 Certain Thermostabile Venom Activators. H. Noguchi, New York.
54 Multiple Non-Inflammatory Necrosis of the Liver with Jaundice (Hepar Necroticum Cum Ictero), and to the Knowledge of Cell Degeneration and Cytolysis in General. H. Oertel, New York.
55 Neuroma Embyronale of the Chorold Plexus of the Cat. H. S. Steensland, New York.
56 Studies on the Toxicity of the Bile. S. J. Maltzer and W. Salant, New York.
57 Constituent of the Bile Causing Pancreatitis and the Effect of Colloids on Its Action. S. Flexner, New York.
58 Carbohydrate Group in the Nucleoproteid of the Spleen. P. A. Levene and J. A. Mandel, New York.
59 A Certain Crystalline Body Obtained on the Prolonged Digestion of Gelantine. P. A. Levene, New York.
60 Gastric Ulcers in Rabbits Following Resection of the Pneumogastric Nerves Below the Diaphragm. W. Ophüls, San Francisco, Cal.

50. Effect of Temperature on Viscosity of Living Blood.—To solve the question of whether or not it is possible to alter the viscosity of the circulating blood by changing the temperature of the surrounding medium, Burton-Opitz performed a series of experiments on dogs in accordance with the method described by Huertl. Six experiments in all were made, three with warm (44 C.) and three with cold water (23 C.). The experiments proved conclusively that the viscosity of the blood reacts very sharply to changes in the temperature of the surrounding medium. The viscosity is decreased by warm and increased by cold water baths. Warm water baths also produced a decrease and cold water baths an increase in the specific gravity of the blood. On the other hand, it was found that hot air baths render the blood more viscous and that they also increase the specific gravity of the blood, just the opposite of the result obtained with warm or cold water.

51. Experimental Cirrhosis of the Liver.—The experiments performed by Pearce demonstrated that the reparative process which follows the widespread necrosis of the dog's liver caused by the injection of hemagglutinative serum constitutes a chronic interstitial hepatitis of definite and constant character. This is not only a new type of experimental hepatic lesion, but is more definitely a cirrhosis than is any other experimental lesion hitherto described. It is of importance in explaining the histogenesis of cirrhosis, and incidentally various repair processes in the liver, but it does not aid in the elucidation of the etiology of cirrhosis in man, nor does it explain the peculiar arrangement of the new connective tissue in any form of human cirrhosis, except, possibly, that associated with chronic passive congestion. It definitely demonstrates, however, that cirrhosis may follow extensive primary destructive lesions, a view not yet fully accepted, and supports the contention of Kretz that cirrhosis is essentially a reparative process.

Colorado Medical Journal, Denver.

January.

61 Tuberculosis in the State Institutions of Tennessee. W. J. McMurray, Nashville.
62 Rational Way to Treat, or the Use of Common Sense in the Treatment, Management and Prevention of Tuberculous Diseases. J. C. LeHardy, Savannah, Ga.
63 Methods of Treatment of Tuberculosis. A. C. Foster, Morganfield, Ky.

Fort Wayne Medical Journal-Magazine.

January.

64 Status of Venereal Diseases. G. Van Sweringen, Ft. Wayne.
65 Foreign Bodies in the Eye; Complications Produced; Treatment. A. E. Bulson, Jr., Ft Wayne.

Illinois Medical Journal, Springfield.

January.

66 Charitable and Penal Institutions of Illinois. C. S. Deneen, Springfield.
67 Economic Aspect of the Modern Treatment of Tuberculosis. J. W. Pettit, Ottawa.
68 Sanatorium Treatment of Tuberculosis in Colorado. G. W. Holden, Denver.
69 Ignorance as a Cause of Disease and Disaster. D. Lewis, Chicago.
70 Alcohol and the Mind. C. L. Hamilton, Dwight.
71 Some Special Phases of Ear Cases. J. B. Taylor, Bloomington.
72 Ulcer of the Stomach. W. E. Guthrie, Bloomington.

Medical Sentinel, Portland, Ore.

January.

73 Practical Side of Infant Feeding. R. J. Marsh, Portland.
74 The Medical Profession. B. A. Cathey, Corvallis, Oregon.
75 Placenta Prævia. T. O. Boyd, Twin Falls, Idaho.
76 Oregon Practically an Unorganized State. J. N. McCormack, Bowling Green, Ky.

California State Journal of Medicine, San Francisco.

January.

77 Relation of the Nitrogenous and the Carbonous Metabolism in Disease. A. E. Taylor, San Francisco.
78 Spirochæta Pallida. S. Blum, San Francisco.
79 Relation of Bacteria to the Development of Gallstones. A. J. Lartigau, San Francisco.
80 Radical Cure of Umbilical Hernia. A. W. Morton, San Francisco.
81 Further Data on the Chest Shape in Tuberculosis. W. Hutchinson, Redlands.

Louisville Monthly Journal of Medicine and Surgery.

January.

82 Thoracic Resection for Tumor Growing from the Bony Wall of the Chest. W. O. Roberts, Louisville.
83 Erysipelas. D. O. Hancock, Henderson, Ky.
84 Osler's Nonsense. D. L. Field, Jeffersonville, Ind.
85 Modification of Earl's Pile Clamp. O. E. Bloch, Louisville.
86 Solving Problems in Diseases of Children. W. Wormley, Philadelphia.

Journal of the Mississippi State Medical Association, Vicksburg.

January.

87 Medical Evolution Since 1860. V. M. Neal, Hillsboro.
88 Removal of Ovarian Tumor Complicated with Carcinoma of Stomach—Cocain Anesthesia. W. W. Crawford, Hattiesburg.
89 President's Address Before Leflore County Medical Society, February 6, 1905, Greenwood. S. A. Eggleston, Shell Mound.
90 Pneumonia. L. B. Sparkman, Cleveland.
91 Empyema. D. W. Jones, Fernwood.

Chicago Medical Recorder.

January.

92 Differential Diagnosis Between Some of the Serious Sequelæ of Purulent Otitis Media. F. Allport, Chicago.
93 Coxa Vara Adolescentium. W. Blanchard, Chicago.
94 Prognosis in Heart Disease. F. S. Johnson, Chicago.
95 Tuberculin and Antituberculosis Sera. R. C. Whitman, Chicago.

American Journal of Urology, New York.

January.

96 Hysterical Anuria. E. Garceau and J. W. Courtney, Boston.
97 Tumors of the Bladder, with Particular Reference to Sarcoma. M. Loewenheim.
98 Nephroptosis from the Gastroenterologic View Point. R. C. Kemp, New York.

The Postgraduate, New York.

January.

99 Case Presenting the Clinical Features and Blood Findings of Pernicious Anemia; Recovery. A. F. Chace, New York.
100 When and How Shall Uterine Fibromyomata Be Operated On. J. N. West, New York.
101 Injuries of the Eye Following Paraffin Injection in the Nose. W. Uhthoff, Breslau.
102 Final Report on the Russell Treatment of Pulmonary Tuberculosis. T. W. Bickerton and D. M. Barstow, New York.

Virginia Medical Semi-Monthly, Richmond.

January 12.

103 Volvulus Testis. R. C. Bryan, Richmond.
104 Some of the Difficulties of Diagnosis and Operation in Diseases of the Biliary Tract. W. P. Carr, Washington, D. C.
105 Quinsy and Its Sequelæ. J. Dunn, Richmond.

106 Principles of Surgery. S. McGuire, Richmond.
107 Quinsy; Its Diagnosis and Treatment. C. M. Miller, Richmond.
108 Goiter. R. D. Garcin, Richmond.

New York State Journal of Medicine.

January.

119 What Organized Malpractice Defense Does for the Profession and the Public. J. T. Lewis, New York.
110 Macroscopic Diagnosis and General Indications for Treatment of Cancer of the Larynx. J. N. Mackenzie, Baltimore, Md.
111 Carcinoma of the Larynx. D. B. Delavan, New York.
112 Mediastinal Tumors. W. F. Campbell, Brooklyn, N. Y.
113 Protection of the New York Milk Supply. W. Bensel, New York.
114 Relations of Appendicitis to Diseases of the Uterine Adnexæ and Vice Versa. H. P. Jack, Canisteo, N. Y.

Journal of the Minnesota State Medical Association and the Northwestern Lancet, Minneapolis.

January 1.

115 Tuberculous Kidney Disease. M. C. Millet, Rochester, Minn.
116 Congenital Dislocation of the Hip. E. S. Geist, Minneapolis.
117 Syphilis of the Liver and Its Operative Treatment. A. MacLaren, St. Paul.
118 Bladder Exstrophy. R. C. Dugan, Eyota, Minn.

January 15.

119 Present State of Our Knowledge Concerning the Therapeutic Value of the X-Ray. B. Foster, St. Paul.
120 Diagnosis of Gallstone Disease. G. G. Eitel, Minneapolis.
121 Renal Decapsulation for Chronic Bright's Disease. L. F. Schmauss, Mankato, Minn.
122 Interstitial Uterine Fibroma. J. W. Little, Minneapolis.

Southern California Practitioner, Los Angeles.

January.

123 Symptomatology of Nephritis. G. L. Cole, Los Angeles.
124 Trachoma—Its Causes and Diagnosis. H. B. Ellis, Los Angeles.
125 Displacement of the Uterus and Its Treatment. J. D. Shorb, Los Angeles.
126 The Worm-Doctor Fake. A. Davidson, Los Angeles.
127 Splenoptosis. H. B. B. Montgomery, Los Angeles.
128 Two Pioneer Doctors of Los Angeles. H. D. Barrows, Los Angeles.

Virginia Medical Semi-Monthly, Richmond.

January 26.

129 Management of Normal Labor for the Prevention of Puerperal Infections. H. Old, Norfolk, Va.
130 Pathologic Aspect of Puerperal Infection. E. C. S. Taliaferro, Norfolk.
131 Surgical Aspects of Puerperal Infections. L. Gwathmey, Norfolk.
132 Some Uses of Pelvic Massage. J. T. Johnson, Washington, D. C.
133 Diagnosis of Nephrolithiasis. C. D. Kellam, Norfolk.
134 Pneumogastric Cough. C. P. Jones, Newport News, Va.

Pennsylvania Medical Journal, Athens, Pa.

January.

135 Address in Obstetrics. E. B. Everitt, Philadelphia.
136 *Adaptation of the General Public to the Principles and Practice of the Prevention of Tuberculosis. H. S. Anders, Philadelphia.
137 *Diagnosis of Incipient Pulmonary Tuberculosis. G. W. Norris, Philadelphia.
138 *Sanatorium Treatment of Tuberculosis. G. B. Kalb, Erie.
139 *Outdoor Life Versus Confinement in the Treatment of Bone Tuberculosis. H. A. Wilson, Philadelphia.
140 Sanatorium Treatment for the Indigent Tuberculous. B. H. Detwiler, Williamsport.
141 Results of Timid Employment of Diphtheria Antitoxin. I. N. Snively, Philadelphia.

136-139.—See abstract in THE JOURNAL, Oct. 21, 1905, page 1271.

Medical Fortnightly, St. Louis.

January 10.

142 Treatment of Neurasthenia. C. K. Mills, Philadelphia.
143 Gonorrhea and Some of Its Results. E. G. Ballenger, Atlanta, Ga.

January 25.

144 Parturient Sepsis. C. E. Ruth, Keokuk, Iowa.
145 Nerves of the Genital Tract. B. Robinson, Chicago.
146 Mucocolitis. W. T. Knox, Manchester, Ill.

Kansas City Medical Index-Lancet.

January.

147 *Psychopathic Manifestations of the Non-Insane Psychoneuroses. J. Punton, Kansas City.
148 Appendicitis; with Death from Complications. H. C. Crowell, Kansas City.
149 Surgery of Typhoid Fever. St. E. Sanders, Kansas City.
150 Invagination or Prolapse of the Distal End of the Ureter in the Bladder. B. Robinson, Chicago.

147.—This article appeared in THE JOURNAL, Dec. 2, 1905.

Journal of Mental Pathology, New York.

151 Reflex and Automatic Excitability. S. Sergi, Rome, Italy.
152 Neurasthenia and Neuro-Hyperesthenia of Grocco. P. Timpano, Bova, Reggio Calabria.
153 Electric Sleep; An Experimental Study with an Electric Current of Low Tension. L. G. Robinovitch, New York.

Journal of the South Carolina Medical Association, Charleston.

January.

155 Pathogenic Protozoa. G. McF. Mood, Charleston.
156 Diagnosis of Disease Resultant on Lesions in the Vascular System. W. P. Cornell, Charleston.
157 Appendicitis. A. B. Baker, Charleston.

Journal of Medical Research, Boston, Mass.

January.

158 Critical Review of the Literature on Experimental Variola and Vaccinia in the Monkey. W. R. Brinckerhoff and E. E. Tyzzer.
159 Histology of the Skin Lesions in Varicella. E. E. Tyzzer.
160 Case of Pott's Disease in the Monkey. E. E. Southard, Boston.
161 Experimental Work in Relation to Micrococcus Rheumaticus and Streptococcus Pyogenes. J. M. Beattie.
162 New Colony Counter and Dissecting Microscope. A. H. Stewart, Philadelphia.
163 Cystic Aplasia of the Cerebral Hemispheres in an Idiot Child. W. N. Bullard and E. E. Southard, Boston.
164 Experimental Myasis in Goats, with a Study of the Life Cycle of the Fly Used in the Experiment. F. C. Wellman, Benguela, Angola, West Africa.
165 Methods for the Localization of Potassium and Phosphorous. M. Tracy, New York.

Texas Medical News, Austin.

January.

166 Pseudo-Bulbar Paralysis, Asthenic Type. J. S. Wooten, Austin.
167 When to Operate in Appendicitis. H. B. Hill, Austin.
168 Rheumatism as a Factor Entering into Eye and Throat Diseases. C. Joyes, Ft. Worth, Texas.
169 The Country Doctor. W. S. Christian.

Women's Medical Journal, Toledo, Ohio.

January.

170 Non-operative Treatment of Prolapse of the Uterus. K. C. Mead, Middletown, Conn.

Buffalo Medical Journal.

January.

171 Non-tuberculous Joint Lesions. R. O. Meisenbach, Buffalo.
172 Tetanus. E. M. Coss, Cattaraugus, N. Y.
173 Publotomy. M. C. Breuer, Buffalo.
174 Treatment of Coughs. N. G. Price, Newark, N. J.

Texas State Journal of Medicine, Fort Worth.

January.

175 Organization and Its Advantages to the Individual Doctor. J. N. McCormack, Bowling Green, Ky.
176 Tuberculosis in Texas Penitentiaries. E. E. Guinn, Jacksonville.
177 Influence of Heredity, Training and Environment on Mentality. W. F. West, Waxahachie, Texas.
178 Cause of Ununited Fractures. R. W. Knox, Houston.
179 Injuries at the Elbow Joint. O. L. Norsworthy, Houston.
180 Case of Abdominal Pregnancy. S. R. Burroughs, Buffalo.
181 Removal of Submerged Faucial Tonsils. F. D. Boyd, Ft. Worth.
182 Plea for the Earlier Recognition and Removal of Uterine Cancer. J. H. Reuss, Dallas.
183 Complete Removal of the Tonsils. W. B. Howard, Dallas.
184 Tuberculosis Cutis Verrucosa. J. B. Shelmire, Dallas.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal.

February 3.

1 Acute Bone Disease in Children. E. Owen.
2 *At What Age Should a Cleft of the Palate Be Closed? R. W. Murray.
3 *Closure of Gaps in the Skull. J. H. Pringle.
4 Aural Cases in General Practice. S. Paget.
5 *Indications for Operation in Chronic Suppurative Disease of the Middle Ear. W. S. Syme.
6 Some Varieties of Hernia in Children. E. S. Carmichael.
7 X-Ray Treatment of Ringworm. G. Sichel.
8 Does Diachylon Affect the Infant When It Fails to Produce Abortion? R. Heelis, F. H. Jacob and S. R. Trotman.

2. **When to Operate for Cleft Palate.**—Murray prefers, as a general rule, to postpone operating on the palate until the child is between 2 and 3 years of age, and then to close the cleft completely at one operation. At that age there is more tissue to work with and it is generally possible to fashion a good, soft palate and uvula by paring the edges of the cleft and uniting them in the middle line. Excess of cicatricial tissue is thus obviated, for union takes place by first intention. The powers of articulation also are improved.

3. **Closure of Gaps in Skull.**—Pringle favors filling gaps in the skull with celluloid plates after the method devised by Fraenkel. Of six patients so treated, three operations were successful and two failed, the plate requiring to be removed because of sepsis. The sixth patient had two plates inserted; one healed in well and the other had to be removed because of

sepsis extending from the nasal cavity. Of the three successful cases, one patient has worn the plate for eight years, and the remaining two patients have worn theirs for more than three and a half years.

5. **Indications for Operation in Suppurative Middle Ear Disease.**—The objective signs mentioned by Syme as indications for operation are: 1. Pain on pressure over the mastoid, or more particularly over the antrum. This may or may not be accompanied by postauricular swelling. 2. A sinus behind the ear leading to an erosion in the bone. 3. Caries of the petrous bone. 4. An extensive or recurring growth of granulation tissue, pointing to invasion of the bone. 5. Facial paralysis. 6. The presence of thick, cheesy masses in the tympanic cavity, the inference being that the same condition exists in the antrum. 7. Very foul smelling discharge. 8. Stenosis of the meatus, either membranous or bony, either or both of which may be due to the irritation caused by the purulent discharge. 9. Persistent discharge in spite of regular and thorough antiseptic treatment. The subjective phenomena to be considered with regard to the advisability of or the necessity for operation are pain, vertigo, change in the hearing, and all symptoms which point to the impending onset or to the actual consummation of an intracranial infection. Syme says that in the larger proportion of cases of chronic otorrohea the patients do not show, at the time they present themselves for treatment, any of these indications. In such cases the ordinary antiseptic treatment with, if necesary, the rectification of an intranasal or pharyngeal condition, or in certain cases ossiculectomy, should be given a trial. If these measures do not affect a cessation of the disease within a reasonable time, its continuance should then be taken as a strong indication for radical operation.

The Lancet, London.

February 3.

9 The Acute Abdomen. W. H. Battle.
10 *Placenta Prævia. R. Warren.
11 *Points in the Treatment of Heart Failure in Diphtheria. C. Bolton.
12 *Eucalyptus Oil as a Vermifuge in Ankylostomiasis. L. P. Phillips.
13 Aberrant Vaccinia. M. E. Paul.
14 Study of Mental Fatigue in School Children. J. Bellel.
15 A Case of Glanders. L. Woodcock.
16 Rupture of the Uterus, with Illustrative Cases. T. Wilson.
17 *Dermoid Tumor of the Mediastinum in a Child Aged Two Years. G. Carpenter.
18 Uniform Lineal Growth of the Human Fetus. R. C. Roberts.

10. **Placenta Praevia.**—Warren reports a series of 94 cases in which six mothers died, or 6.3 per cent., while of 93 infants 49 died, or 52 per cent. As regards parity, of the 76 cases in which it is mentioned 12 were primiparæ whilst 36 had had five labors or more previously. None of the primiparæ died, which is a matter of some interest, since King in his series found the mortality of primiparæ to be 30 per cent., the general mortality in his collection being 22 per cent. Twin labors occurred twice in the series, of which three infants and one mother died. Recurrence in one case is noted in the three preceding labors. Hydramnios was reported in 4 cases, 2 of these being of the 10 cases seen personally. Prolapse of the cord happened in 3 cases out of 54 in which the de Ribes bag was not used, and in 4 cases out of 40 in which it was used. Postpartum flooding was noted in 14 cases, in 4 of which the placenta was adherent; adherence of the placenta was found in 2 other cases without postpartum hemorrhage. There seems to be a peculiar tendency for a placenta with a low implantation to become adherent. In 2 cases of postpartum hemorrhage there was atony of the uterus; both died. One case of puerperal melancholia is recorded. In one group of 27 cases only such minor steps as rupturing the membranes or giving ergot were taken. There was no case of complete placenta prævia in the group. In 6 other cases bipolar version was the treatment adopted. Twenty-one patients were treated by internal version or manual delivery in the case of pelvic presentations. Of the 21 mothers 5 died, and of the 22 children 14 died. Forty patients were treated by the insertion of the de Ribes bag. None of the mothers died; 25 of the infants died.

11. **Treatment of Heart Failure in Diphtheria.**—Bolton speaks of the value of the early administration of antitoxin in sufficiently large doses as a preventive of heart failure.

12. **Eucalyptus Oil in Ankylostomiasis.**—Phillips' plan of treatment is as follows: About 6 p. m. the patient takes a saline purge and then fasts all night. On the next morning he takes half of the following mixture, taking the remaining half an hour later:

℞. Olei eucalypti	3ss	2
Chloroformi	gtt. xlv	3
Olei ricini	3x	40

In young boys and in feeble anemic patients the dose is divided into thirds and given at twenty-minute intervals. The dose can be repeated every second day. In 44 cases of ankylostomiasis the treatment was wholly successful. In 21 cases a single dose was sufficient, and in 16 cases two administrations were necessary. Phillips is convinced that the treatment is satisfactory with reference to its vermifuge effects.

17. **Dermoid Tumor of Mediastinum.**—Carpenter reports a case of this nature which occurred in a female child 2 years old. About a year before he first saw her she became languid, contracted a cough and subsequently developed pneumonia. At this time the chest was noticed to be bulging. She could not lie down, her respirations were accelerated, and she complained of pain in her side. When admitted to the hospital she was cyanosed and there was sucking-in of the lower intercostal spaces, mostly on the left side. The right side of the chest, in front, was dull from apex to base. On the left side, in front, there were dullness and tubular breathing above and below the clavicle. On the right side, behind, the chest was absolutely dull. The liver was displaced downward and there was a distinct depression between the liver and the costal margin. The radiograph which was taken at that time showed that the whole of the right side was opaque to the rays. The child died shortly afterward, and a postmortem examination was made. In front of the right lung was a mass the size of a fist. On incising this from six to eight ounces of clear fluid escaped. Inside the cyst was some cheesy material with a few hairs lying at the bottom. The rest of the tumor felt hard, although it consisted of a considerable number of cysts, most of which contained a gelatinous material of a light brownish color.

The Practitioner, London.

February.

19 Normal Daily Temperature, Variation and Its Modifications in Pulmonary Tuberculosis. J. J. Galbraith.
20 *Sterilization of the Hands. R. A. Stoney.
21 *Foreign Bodies in the Uterus. J. B. Hellier.
22 Food Factor in the Paroxysmal Neuroses. F. Hare.
23 Chorea Gravidarum. J. S. Shelll.
24 Some Aspects of Pelvic Appendicitis. G. G. Turner.
25 Tissue Metabolism of Phthisis Pulmonalis, Albumosuria, and the Thoracic Indices of Phthisis. A. S. Parkinson.
26 Recent Reports Concerning Endotheliomata and Peritheliomata. A. Carless.
27 *Fibroid Tumor of the Vagina. G. F. B. Simpson.

20. **Sterilization of Hands.**—The results of experiments have convinced Stoney that it is possible to render the hands sterile or at least free from pathogenic bacteria by a simple and short method which does not require more than ten minutes. Therefore, the wearing of gloves during the performance of an aseptic operation is not necessary, though Stoney thinks it is advisable in the case of those operators whose skin is either unusually difficult to sterilize or easily injured by the constant use of antiseptics. The method employed by Stoney is as follows: 1, Scrubbing with a sterilized nail brush in hot water (as hot as can be borne) with carbolic soap for five minutes, several changes of water being used; 2, rubbing thoroughly with sterile gauze wet with methylated spirit; 3, immersion for one minute in a watery solution of biniodid of mercury (1 to 1,500). In every case the hands, instruments, silk, etc., were rinsed in sterile water in order to remove any excess of antiseptic which might interfere with the growth of organisms in the culture tubes. In all cases the hands were tested while wet and sufficient force was used both with the silk ligatures and scraper to remove a visible amount of epithelial débris.

21. **Foreign Bodies in Uterus.**—The foreign body in the uterus in the case reported by Hellier was an ordinary hairpin which the patient had introduced into the uterus. One point of the pin projected from the middle of the posterior lip of the uterus just above the surface of the mucous membrane, and

the other point could be felt under the mucous membrane at the junction of the cervix to the posterior vaginal wall. Removal was accomplished by drawing down the uterus, exposing the posterior prong with a snip of the scissors, then drawing down both prongs as far as they would come, and straightening out the pin, after which it was easily withdrawn.

27. **Fibroid Tumor of Vagina.**—The tumor in the case reported by Simpson measured 5¼ inches round the circumference, 2 inches longitudinally, 1¾ inches transversely, was tense in consistence, and not tender on pressure. The mass was covered by mucous membrane, which had become eroded at one point, leaving a round grayish area the size of a sixpence, and coated with a greenish-yellow secretion. The tumor was attached by a broad base, and springing from the left wall of the vagina just within the ostium vaginæ, and growing distinctly outward. The left tumor was free from all sides of the vagina except the left, and the examining finger could be passed into the vagina beyond it more easily above and to the right of the swelling. The mucous membrane covering the tumor was incised vertically and dissected off backward, until access was obtained to the atachment of the tumor, which was discovered to be occupying the left lateral aspect of the vagina. On microscopic examination the main mass of the tumor was found to consist of fibrous tissue, more or less intermixed with plain muscle fibers. In some places the fibrous tissue predominated, in others the muscle cells were more numerous. On the whole, the two elements, fibrous and muscular, were fairly equally mixed, with perhaps a slight predominance of fibrous tissue.

Annales de l'Institut Pasteur, Paris.

Last indexed page 309.

28 (XIX, No. 12.) Sensibilisatrice spécifique dysentérique dans le sérum des animaux vaccinés et des malades. C. Dopter.
29 Sérums Hémolytiques. L. Rémy.
30 Sur l'origine intestinale de l'anthracose pulmonaire. P. Vansteenberghe and Grysez.
31 Essais de culture du bacille lépreux. P. Emile-Weil.
32 Différenciation du "Bacillus putrificus" (Bienstock) et des bacilles anaérobies tryptobutyriques (Achalme). A. Rodella.
33 Note sur une épidémie cholérique localisée, d'origine manifestement hydrique. Brau (Saïgon).
34 Action des microbes vivants sur la solution de bleu azur dans l'alcool méthylique. F. Marino.

Presse Médicale, Paris.

35 (XIII, No. 103.) Day Nurseries in Factories.—Les crèches industrielles. Bué.
36 *Nasopharynx et tuberculose pulmonaire. H. Bourgeois and Ducos.
37 Bromatologie clinique des légumineuses. A. Martinet.
38 (No. 104.) *Syphilis et Myopie. F. De Lapersonne.
39 Transportation of the Wounded on the Field.—Transport des blessés en campagne. Bonnette.
40 Les lécithines et le lait (and milk). A. Fournier.
41 (No. 105.) Recherche des oeufs de parasites de l'intestin dans les matières fécales. M. Letulle.
42 La transplantation des veines et ses applications chirurgicales. Etude expérimentale. Alexis Carrel (Chicago).
43 (XIV, No. 1.) Satire de Paracelse contre les médecins. Laigeel-Lavastine.
44 La stovaine. P. Reclus.
45 La scoliose infantile. P. Desfosses.
46 Les hydrates de carbone chez les diabétiques. A. Martinet.
47 (No. 2.) *Sur quelques albuminuries de la grossesse (pregnancy). V. Wallich.
48 Day Nurseries in Hospitals for Children.—Les crèches de nourrissons dans les hôpitaux d'enfants. Leçon d'hygiène infantile. H. Méry.
49 Immunisation active des jeunes bovidés contre la tuberculose (of calves). C. Guérin (Lille).
50 (No. 3.) Grains polliniques simulant des oeufs de parasites dans les matières fécales. A. Chaufard.
51 Présence du Spirochæta pallida dans le sang des syphilitiques. L. Nattan-Larrier and A. Bergeron.
52 (No. 4.) Lésions nerveuses et tuberculose cavitaire chez le nourrisson (in infants). L. Lortat-Jacob and G. Vitry.
53 Les modifications anatomiques après la reduction non-sanglante de la luxation congénitale de la hanche (of hip joint). J. Gourdon.
54 *Insuffisance spermatique et insuffisance diastématique. P. Ancel and P. Bouin (Nancy).

36. **Nasopharynx in Tuberculosis.**—Bourgeois and Ducos discuss what they call "pseudo-atrophic coryza" in the tuberculous. It was found constantly in the advanced and very frequently in the incipient cases. Ducos is inclined to regard it as part of the general predisposition to tuberculosis, and urges the necessity for treating and curing it, especially in the incipient stages of tuberculosis.

38. **Syphilis and Myopia.**—De Lapersonne thinks that myopia, whatever its degree and whatever the age of the patient, should always suggest the necessity for a general examination. It is not enough to prescribe the proper glasses. The general condition should be examined and also the past record of infections, especially syphilis, inherited or acquired. If a myopic adult contracts syphilis, the usual precautions should be doubled. Not only should mercurial treatment be energetic and systematic, but the greatest attention should be paid to the myopia, with instructions to rest the eyes frequently. He has witnessed cases of detachment of the retina in myopic syphilitics. In one instance a lad belonging to a myopic family contracted syphilis at 17, and a year later had complete detachment of the retina in the left eye. He attributed this to a traumatism, but two or three years afterward there was partial detachment of the retina in the other eye. Considerable improvement occurred under intravenous injections of mercury cyanid, but the field of vision is still much restricted. In another case a myopic young physician, member of a myopic family, noticed impairment of vision seven years after contracting syphilis. The disturbances all vanished under energetic mercurial treatment, but three years later a large central scotoma developed in the left eye, due to hemorrhage into the macula. Atrophying choroiditis and circum-papillary chorioretinitis are affections common in acquired syphilis, like interstitial keratitis and progressive myopia in the inherited form. The progressive myopia noted in some cases of inherited syphilis is refractory to correction by glasses, even although the disturbances in vision do not indicate a high amount of myopia, not more than 10 or 14 D. In central choroiditis there may be a more or less extensive relative scotoma. This may aid in differentiating and in the prognosis. This pathologic myopia was found more frequent among the illiterate in Tscherning's investigations, showing that school work can not be incriminated in these cases.

47. **Albuminuria of Pregnancy.**—Besides the albuminuria of a pregnant woman affected with Bright's disease and the albuminuria due to compression of the kidney by the pregnant uterus, there is another variety which Wallich calls "albuminuria from suppuration." The symptoms are polyuria with or without disturbances in micturition, and turbid or purulent urine, but very little general disturbance, no edema nor eye symptoms nor pain in the epigastrium. In the space of two months, recently, he noted this form of albuminuria in 6 out of 15 pregnant women showing albuminuria. He put these patients on a milk diet and administered methylene blue or other disinfectant for the urinary passages. The albuminuria may vanish, while the polyuria and turbid urine may persist, although without fever or other complications at any time during pregnancy and the puerperium. The main point is to decide whether the urinary apparatus is permanently affected; as a rule it is not.

54. **Spermatic Insufficiency and Diastematic Insufficiency.**—Ancel and Bouin explain that insufficiency of the testicles does not mean inadequate production of the seminal secretion alone. There is a seminal gland in the testicle and an interstitial gland. The seminal gland comprises the seminiferous tubules, while the intertubular connective tissue is what the authors call the interstitial gland or diastema. The latter is probably the seat of the production of the internal secretion of the testicles. Experiments on animals have shown that each gland is practically independent of the other and may fail in its task without compromising the functional activity of the other. There is, therefore, a "spermatic insufficiency" and a "diastematic insufficiency." The former is shown solely by the absence of spermatozoa and is physiologic in the aged. The diastematic insufficiency is manifested in other and numerous ways. If the gland fails to work at all, the age of puberty does not bring virility and the individual grows into a natural eunuch. If the gland does not fail until after puberty, the manifestations are less marked, but the beard and hair are liable to drop out, the voice to become hoarse, the mammæ may develop and the outlines become more rounded generally. The individual may remain infantile or develop into a giant or present the characteristics of the female. These various types and transitions have been noted among pigs, and when slaughtered the testicles were found abnormal, as anticipated. Experiments on rabbits proved that it is possible to retard the

development of puberty for six months by ligating the vas deferens. Diastematic insufficiency in boys as puberty approaches is evidenced by a rapid and exaggerated growth of the limbs, tardy appearance of the hairy system and of the development of the external genitals, marked muscular weakness, nervous exhaustion, asthenopia, etc. The noticeable action of the interstitial gland in the testicle on the development of the skeleton is responsible for the stimulation of the growth of the epiphyseal cartilages as the first manifestation of diastematic insufficiency, transient or permanent, appearing during the period of puberty. They add that such lads seem to be peculiarly predisposed to tuberculosis, possibly owing to lack of the "invigoration" from the internal secretion of the interstitial gland in the testicle.

Archiv f. Gynäkologie, Berlin.

Last indexed, page 470.

55 (LXXVII, No. 1.) Uterine Lymphatics During Pregnancy.—Ueber die Lymphbahnen der Uterus-Schleimhaut während der Schwangerschaft. E. Schick.

56 *Inheritance of Tuberculosis.—Erblichkeit der Tub. L. M. Bossi (Genoa).

57 Zur Biologie des menschlichen Placenta. W. Liepmann.

58 Ueber Ovarien-Transplantationen. G. L. Basso.

59 *Zur Pathogenese der Eklampsie (experimental). O. Semb.

60. Entstehung der Hematocele. F. Skutsch.

61 Ueber Adenoma malignum cervicis uteri. A. R. Limnell.

62 Zur Biologie der Genital-Organe im Fötal-Alter. J. Hofbauer.

62½ Nochmals Bossi und vaginaler Kaiserschnitt (Cesarean section). A. Döhrssen. Id. Leopold.

63 (No. 2.) Die Follikel-Atresie während der Gravidität, insbesondere die Hypertrophie und Hyperplasie der Theca interna-Zellen (Theca-Luteïn-Zellen) und ihre Beziehung zur Corpus luteum-Bildung. L. Seitz.

64 *Ueber Enteroptose, nebst Bemerkungen über die Druckverhältnisse im Abdomen (pressure conditions in abdomen). P. Mathes.

56. **Inheritance of Tuberculosis.**—Bossi's article is a contribution from an obstetrician to our knowledge of tuberculosis. He examined large numbers of placentæ and of fetuses from women with tuberculosis, supplementing his research by experimental work. He found that it was a very rare exception when the Koch bacillus was transmitted to the fetus from the parents during its intrauterine existence. The toxins of tuberculosis may be transmitted. They seem to accumulate in the placenta and to pass thence into the fetus. The toxins thus transmitted are responsible for the defective development and organic weakness noted in such children. They favor infection during early infancy.

59. **Pathogenesis of Eclampsia.**—Semb writes from Christiana to describe extensive experimental experience in regard to immunization of rabbits against eclampsia.

64. **Enteroptosis.**—Mathes remarks that the large number of women with enteroptosis observed at the gynecologic clinic at Graz, where he is assistant, early attracted his attention, and he has made a special study of this condition. His conclusions may be summarized in the statement that enteroptosis is a constitutional and hereditary anomaly of the entire organism, a lack of vital energy in all the body tissues, although it derives its name from the most striking manifestation, the sliding down of the bowels. The abdominal organs slide downward on account of the insufficiency of the frequently hypoplastic, sunken-in thorax and the relaxation of the abdominal walls. The organs in the lower abdomen thus become supported only by their ligaments and the abdominal walls. The condition is readily recognized from the general aspect of the body. The spine is bent over and the longitudinal axis of the thorax forms an obtuse angle with the similar axis of the abdomen. The expression of the face is juvenile. In short, the habitus enteroptoticus is identical with what we call the habitus phthisicus. The clinical importance of the anomaly depends on the degree in which the nervous system is involved. The greater the congenital anomaly, the earlier the results become manifest. This is especially the case in the infantile form characterized by hypoplasia of the thorax and the infantile general aspect. The chlorosis of such girls is a "crisis" of enteroptosis. The latent predisposition is fanned into an actual malady by some special stress, some genital or other affection, an exhausting disease, pregnancy, tight lacing, overstrain, lack of proper nourishment or similar drag on the vitality. The symptom-complex of retroflexion of the uterus is identical with that of wandering kidney and enteroptosis. The peritoneum of women with this displacement of the bowels is exceptionally sensitive, and this sensitiveness is increased by any genital affection. The effect on the general nervous system has nothing to do with hysteria and neurasthenia. Enteroptosis is undoubtedly on the increase, but the paintings of the old masters show that it has always existed. Memling's "Eve," in the Vienna gallery, is a typical example, and also some of Botticelli's women, while the number of modern painters who admire the enteroptosic type, he states, is considerable, especially the pre-Raphaelites. Treatment must consist in general strengthening measures. In severe cases strict bed rest and Weir Mitchell forced feeding may be ordered. Gymnastic exercises to strengthen the muscles of the thorax and of the abdominal walls correspond to causal indications. A well-fitting abdominal bandage below the umbilicus, supported on the pelvic girdle, will put an end to a number of the disturbances. Weight from the shoulders should be avoided. In conclusion Mathes declares that the local treatment of gynecologic affections should be restricted to the minimum and to those cases alone in which it responds to the causal indications. Prophylaxis is important to recognize and to compensate the constitutional defect and to keep all exciting causes away from those predisposed to this condition. He denies the correctness of Hörmann's conclusions, mentioned in these columns on page 292 of the last volume, showing the fallacy of some of his premises.

Berliner klinische Wochenschrift.

65 (XLII, No. 50.) Ueber die Wiedergewinnung von Toxin aus seiner Antitoxinverbindung (toxin from its antitoxin combination). J. Morgenroth.

66 *Hörprüfung und anatomischer Befund bei progressiver Schwerhörigkeit (tests of hearing and anatomic findings in progressive deafness). G. Brühl.

67 *Armlosung und Wendung (freeing the arm and version). Apfelstedt.

68 *Congestive Hyperemia in Treatment of Acute Inflammation.—Zur Behandlung acuter Entzündungen mittels Stauungshyperämie. R. Stich.

69 Frequency of Primary Intestinal Tuberculosis at Berlin.—Ueber die Häufigkeit der primären Darmtuberkulose in Berlin. Edens. (Concluded.)

70 (No. 51.) *Detachment of Retina Cured for 23 Years.—Ueber eine durch Operation geheilte und 23 Jahre lang geheilt gebliebene Netzhautablösung. H. Cohn (Breslau).

71 *Zur Pathologie und Therapie des Kryptorchismus. M. Katzenstein.

72 Eine neue Centrifuge mit hoher Tourenzahl und zuverlässigen Tourenzähler. O. Thilenius (Soden).

73 Ueber Strikturen der männlichen Urethra. Neuhaus. (Concluded.)

66. **Anatomic Findings in Progressive Deafness.**—Bruehl insists on the importance of functional tests of the hearing as a means of distinguishing between the various pathologic anatomic conditions underlying progressive deafness. It is possible to distinguish three groups by the functional tests, even when the membrane is intact and the symptoms are vague: the cases of progressive deafness in which the functional disturbances are due to an isolated affection of the middle ear, those in which it is due to affections of the internal ear and those in which both middle and internal ear are involved. He describes some of the functional tests and the mechanism of their action.

67. **Modified Version.**—Apfelstedt suggests that one of the arms should be drawn out whenever version by the foot is necessary. This imitates a natural process and prevents suffocation of the child in freeing the arms later. He advocates the measure for trial in the clinic, not for general adoption as yet.

68. **Congestive Hyperemia for Acute Inflammations.**—Stich reports 150 cases of acute inflammation at Garré's clinic treated by artificially induced hyperemia. The results have shown the harmlessness of the constriction used for the purpose, with proper technic, closely supervised, and they have shown again the constant relief from pain and the possibility of avoiding the necessity for mutilating operations. He relates the history of a case in which the constriction was applied without due medical supervision, with the consequence that the arm became permanently contracted, with chronic edema and inability to use the fingers, not from necrosis of the tendons, but solely from the excessive and overlong application of the constriction. In conclusion he emphasizes the fact that treatment with congestive hyperemia requires much closer medical supervision than any other method of treating acute inflammations. Physicians who have not the time, the patience or the opportunity for such close supervision should not attempt to treat a

patient by congestive hyperemia, as they are liable to do more harm than with the knife. If the physician has patience enough he should commence with mild cases and suspend the treatment if he does not succeed in banishing the pain, applying it again to the next appropriate case. By this tentative use of the new method he will soon gain confidence and enable his patients to profit by what Stich calls "this fruit of Bier's genius." The finest results are obtained with tendon sheath inflammations. The pain is relieved, the process aborted or shortened, and complete functional restitution is the rule. When the congestive hyperemia was induced with a suction cup fitting over the lesion into sound tissue around, as in case of furuncles or carbuncles, the pain subsided and the lesion healed after from two to ten applications, sooner than with other technics. In 50 cases the measure failed in only 3 instances. In the severer cases of osteomyelitis the results were less satisfactory. One of the 2 patients with acute arthritis was a physician suffering intensely from inflammation of the elbow and of the articulation between the atlas and the occipital bone, the result of gonorrheal infection five weeks previously. He was skeptical in regard to the congestive hyperemia, but the prompt relief of his pain soon converted him and his autoobservation proved instructive, as he reacted to the slightest blunder in technic. It was remarked in his case that the constriction of the arm and neck had to be a little tighter when he was reclining than when he was sitting up to obtain the same results. The articulations involved healed without the least impairment of function.

70. **Detachment of Retina Cured for 23 Years.**—Cohn describes the case of a patient with detachment of the retina who has been under observation for twenty-three years. The man was treated with sclerotomy twice repeated, the cure thus obtained persisting unchanged for seventeen years to date. He discusses the various methods of treating detachment of the retina, preaching always, "Everything out, never anything into the eye." Puncture of the sclerotic with the Graefe knife is the most promising measure, he says. He has performed sclerotomy 39 times, frequently with excellent results. In one case a girl was cured by darkness, revulsion and leeches without operative intervention, the cure persisting till her death, twenty-seven years later. In his experience with 100,000 cases of eye affections he has encountered only 559 of detachment of the retina. When there is still perception of light, he advises repeated sclerotomy, a pressure bandage, diaph resis with jaborandi, and purgatives. These measures will sometimes cure the detachment permanently, as in the case specially reported. Uhthoff has cured 28 out of 337 patients treated by sclerotomy, as he is going to relate in detail at the Lisbon congress. Deutschmann has also had 7 patients cured for over ten years by this means.

71. **Treatment of Retention of Testicle.**—Katzenstein reviews the anatomic conditions and affirms that operative treatment of the testicle retained in the inguinal canal should not be attempted before the eighth or tenth year, although when complicated with hernia it demands immediate treatment at any age. He operates by drawing the testicle down into place with a thread passed through the tunica albuginea and tunica vaginalis of the retained organ. After the thread is thus passed through the testicle, through an incision over the inguinal canal, it is seized from below with long forceps introduced through the scrotum. The testicle is thus drawn down into place and is held there by being fastened to a flap from the inside of the thigh, about the size of a quarter, with a broad pedicle. The under side of this flap is sutured to the testicle, four stitches embracing the tunica albuginea. This holds the testicle and stretches the spermatic cord. Every step taken exerts traction on the cord by means of the attached flap from the thigh. After a few weeks the cord becomes permanently stretched, and the base of the flap uniting it with the thigh can then be severed. He has performed this operation fifteen times on 10 individuals. In every case the testicle has remained in its normal place and has grown in size. The wounds were treated with bismuth or a paste, and protected with a light dressing. The patient was kept in bed for a week or so and the leg gradually used. Others have modified his original procedure by fastening a string to the testicle and passing the string around the foot, thus exerting traction on the spermatic cord from the foot. Longard and Lanz fasten the testicle to the thigh with adhesive plaster, but this is not sufficient in case of a very elastic spermatic cord. Others still have implanted the testicle in the thigh, but general anesthesia is required for its final restoration to place. Katzenstein claims that his technic is sufficient and superior, as it is simple and gives ideal results.

Münchener med. Wochenschrift, Munich.

74 (LII, No. 49.) *Ueber Wundbehandlung und Wundverband. E. Graser.
75 Wert des Sondermannschen Saug-Apparates zur Diagnose und Therapie der Nasenerkrankungen (aspiration treatment of nasal affections). A. Honneth.
76 *Ueber Operationen im Hause des Patienten. H. Ladenburger.
77 Forced Feeding in Enteroptosis.—Die Bedeutung der Zellmast mit Riedels Kraft-Nahrung für Behandlung der schlaffen Eingeweidesenkungen und ihrer Folge und Begleitzustände. W. N. Clemm.
78 Zur Technik der Klammernaht nach Michel (suturing with clips). J. Hertzka.
79 Ueber die Messung der Haut-temperatur (of skin). H. Senator.
80 The Left Hemisphere and Action.—Die linke Hemisphäre und das Handeln. H. Liepmann. (Concluded).

74. **General Principles of Treatment of Wounds.**—Graser dwells on the necessity for training young physicians in the importance of keeping their hands from contact with septic material. It is not necessary to take hold of soiled dressings nor feel of a pus focus. With practice one soon learns to change the dressings and apply ligatures without touching them with the fingers, except the ends of the suture threads. "Take away your fingers," is his constant, reiterated admonition to his assistants, so that "Finger weg" is said to be his motto. He has trained himself until he can now palpate and operate in well-fitting rubber gloves as well as without them. In the after-treatment of wounds he preaches that all wounds that can be completely sutured may be left exposed to the air. The crevices are plugged by the coagulating blood and the wound heals as under a natural scab. The surgeon has to overcome his prejudices before he is willing to leave a wound thus exposed, but the wider his experience the greater his confidence. Before the sutures are finally tied, the last drops of blood are squeezed out, and then a piece of thin gauze is laid over it, held at the edges with collodion, but leaving the wound untouched beneath it. This allows the entrance of air and favors the drying of the coagulated blood into protecting scabs. He thus treats all sutured wounds in the face, almost all laparotomies, appendicectomy incisions and herniotomies. The gauze is applied merely as a screen and can be advantageously omitted in many cases. He follows the same principles in amputations, as he describes in detail with illustrations. He writes from an experience of 500 abdominal operations, 130 amputations, 52 osteotomies and 70 resections of joints, the majority treated according to these principles.

76. **Operations at the Patient's Home.**—Ladenburger has performed 88 major operations at the patient's home, sometimes in a small garret chamber, and he shows how easily and satisfactorily an important operation can be prepared for in an ordinary house. He has the largest and lightest room that can be spared entirely emptied the day beforehand and wiped with wet cloths in the evening. If necessary, sheets are hung up around the walls. He believes that a private house is freer from bacilli than any hospital. Everything that comes in contact with the patient is sterilized by the operator himself, and he can thus rely on its being done to suit him. He has a nurse to take care of the patient at night, while the housekeeping is done by a woman sent by a local charitable association, the "Hauspflegeverein," which was organized to promote these operations at the house instead of breaking up the home by sending the patient, who is often the mother, to a hospital.

Therapie der Gegenwart, Berlin.

Last indexed, page 165.

81 (XLVI, No. 12.) Zur Diagnose und Therapie spastischer Pseudo-Paralysen. A. Goldscheider.
82 Zur Bewertung der Formaldehydtherapie bei der Gicht und harnsauren Diathese (gout and uric acid diathesis). T. Brugsch.
83 Die jetzige Behandlung der Knochenbrüche (fractures). M. Martens.
84 *Eine Methode zur Behandlung von Erkrankungen des Kehlkopfes, der Nase und des Ohres (endomassage of throat, nose and ear). M. Herz.

85 *Intravenöse Jodkalium-Injektionen bei Syphilis (potassium iodid). W. Doevenspeck.
86 *Starch in Diarrhea and Sore Throat.—Stärke bei Durchfall und Halsbeschwerden. G. Hauffe.
87 Orthostatische Albuminurie. A. Loeb.

84. Endomassage of Throat, Nose and Ears.—The apparatus devised by Herz has been previously described in these columns. The patient blows into a tube, the air being conveyed by other tubes to the throat, ears or nose, with a click and ratchet, which automatically arrest the current of air intermittently. This produces a succession of puffs of air under pressure in the organs being treated and has a kind of massage effect.

85. Potassium Iodid Intravenously.—Doevenspeck pleads the cause of intravenous injection of potassium iodid in fulminating cases of syphilis, or when circumstances forbid the use of mercury and rapid action is necessary. He describes 4 cases in which the rapid benefit was strikingly apparent, this prompt effect being the special advantage of the intravenous route. Very small doses prove effectual. He used .1 gm. potassium iodid, giving it in the form of 2 gm. of a 5 per cent. solution. The injection did not seem to affect the circulation, respiration or temperature, and caused merely slight pain at the point of injection, generally quite transient. In the severe cases of cerebral syphilis he repeated the injection every day for six days.

86. Cooked Starch in Diarrhea and Sore Throat.—For years Hauffe has used cooked starch as a soothing gargle in sore throat, and also as a means to check diarrhea. In the latter case it is sipped from time to time by the teaspoonful. It was found especially useful in the diarrhea of consumptives, but was beneficial in all varieties.

Virchow's Archiv, Berlin.

Last indexed XLV, page 743.

88 (CLXXXI, No. 1.) Zur Kenntnis des weiblichen Scheinzwittertums (spurious hermaphroditism). J. Fibiger (Copenhagen). Three cases.
89 Ueber die Defekte im oberen Teile der Kammerscheidewand des Herzens mit Berücksichtigung der Perforation des häutigen Septums (interventricular septum). O. Hart.
90 Ein Teratoma der Thyreoidea. P. Jacob.
91 *Ability of Yeasts to Induce Neoplasms.—Ueber die fragliche Fähigkeit gewisser Hefestämme Neubildungen im Tierkörper hervorzurufen. E. Henke and F. Mlodowski.
92 *Experimentelle Beiträge zur Frage kongenitaler Tuberkel-Bazillen-Uebertragung und kongenitaler Tuberkulose. F. F. Friedmann.
93 Ueber subkutane und periartikuläre Verkalkungen (calcification). F. Kewandowsky.
94 Die sogenannte Pylorus-Hypertrophie ein Entwicklungsstörung (embryonal anomaly). M. Pfaundler.
95 (No. 2.) Zur Pathogenese des Icterus. S. Abramow.
96 *Beitrag zu den traumatischen Erkrankungen des Pankreas. R. Hilgermann.
97 Ueber die Karzinose des Ductus thoracicus. T. Schwedenberg.
98 Beziehungen eines Uterus-Myoms zu gleichzeitig vorhandenen multiplen Tumoren beider Nieren (both kidneys). R. Eller.
99 Ueber Myxome des Herzens, insbes. der Herzklappen (especially of heart valves). A. Leonhardt.
100 *Ueber die durch Adrenalin-Injektionen zu erzeugende Aorten-Verkalkung der Kaninchen (calcification of aorta in rabbit). E. Scheidemandel.
101 *Ueber Aorten-Ruptur und Arteriosklerose im Kindesalter (in children). R. Oppenheimer.
102 (No. 3.) Experimentelle Untersuchungen mit implantierten Hautstücken (scraps of skin). J. Guszmann.
103 Ueber Degeneration und Regeneration peripherischer Nerven. M. Lapinsky.
104 Die chemischen Veränderungen bei der fettigen Degeneration in Beziehung zu den anatomischen (fatty degeneration). Di Cristina.
105 Ein Enterokystom des Mesenteriums und Netzes. G. Roegner.
106 Zur Genese der mesenterialen Chylangiome. P. Klemm.
107 Hypertrophie und Arteriosklerose in den Nieren-Arterien (of kidneys). L. Jores.

91. Relations of Certain Yeast Fungi to Neoplasms.—The extensive researches reported discourage further attempts to connect any of the yeast fungi with the development of neoplasms, malignant or otherwise.

92. Congenital Tuberculosis.—Friedmann relates the results of two years' experimental research with the aid of the Bose endowment. It was noted that week-old embryos of rabbits almost invariably contained tubercle bacilli when such bacilli had been injected into the vas deferens of the parent rabbit a few weeks before coupling. If the coupling took place after an interval of more than four weeks, conception did not follow. When animals had been infected by way of the lungs, and the process had passed into a latent stage, no tubercle bacilli could be discovered in the embryos and they developed into healthy animals. Infection by way of the peritoneum became generalized so quickly that conception seldom followed coupling. A few tubercle bacilli could always be found in week-old embryos when, immediately after coupling, tubercle bacilli had been injected into the mother rabbit's vagina. Intraperitoneal and intravenous infection always prevented conception later when the infectious process was in progress. Subcutaneous infection of the mother animal immediately preceding coupling generally resulted in the finding of isolated tubercle bacilli in the liver of the fetus. They had evidently passed through the placenta. They always proved to be avirulent, and the embryos developed into healthy animals. Examination of sections of six pairs of testicles from cadavers of consumptives failed to reveal tubercle bacilli in any quantity. Only two bacilli were found. Similar sections of testicles from lepers showed swarms of lepra bacilli in the sections of the testicles. Friedmann adds that in 983 tuberculous patients with a parental history the father had been tuberculous in 51.2 per cent., the mother in 32.8 per cent. and both parents in 15.9 per cent., showing the preponderance of paternal tuberculous records. In all his experiments the embryos, although harboring tubercle bacilli, yet developed normally and were not to be distinguished from normal animals.

96. Trauma in Relation to Affections of the Pancreas.—Hilgermann reports a case of carcinoma of the head of the pancreas developing in a healthy man of 50 at the point where he had been injured in an accident eight months before death. The case suggests the possibility that malignant disease may follow trauma of the apparently most inaccessible organs. The development of the symptoms suggested an intimate connection between the injury and the cancer.

100. Calcification of Aorta in Rabbits After Injections of Adrenalin.—Scheidemantel's experiments have confirmed those of Josué and others, who found that long continued intravenous injections of adrenalin induced marked changes in the aorta. The changes were very pronounced in some of the rabbits, while in others they were insignificant. The changes resembled more the calcification of the media in the arteries of the extremities in man rather than arteriosclerosis. In order to approximate the conditions of the development of arteriosclerosis in man, the animals should be kept permanently under the influence of blood-pressure-raising substances, not the mere brief and intense experimental work yet done in this line. (See editorial on page 588.)

101. Arteriosclerosis in Children.—Oppenheimer reports 2 cases of arteriosclerosis in boys of 9 and 10. In the first the child succumbed to a spontaneous rupture of the aorta. High blood pressure and a possible congenital weakness of the wall of the artery were the cause of the affection in the first boy, but in the second it was undoubtedly of toxic origin. The pathologic anatomic findings in each case were those of typical arteriosclerosis.

Zeitschrift für Geb. und Gynäkologie, Stuttgart.

Last indexed page 474.

108 (LVI, No. 3.) *Ueber Prophylaxe der Streptokokken-Infektion bei Geburt und Operation durch aktive Immunisierung. O. Polano (Würzburg).
109 *To Obtain a Perfect Cicatrix After Laparotomy.—Welchen Prinzipien müssen wir zwecks Erzielung einer exakten Laparotomie-Narbe folgen? W. Hannes (Küstner's clinic).
110 *Zur Ovariotomie in der Gravidität. M. Graefe.
111 *Influence of Gynecologic Affections on Composition of Blood. —Einfluss der Erkrankungen des weiblichen Genitals auf die Blutbeschaffenheit. T. Leisewitz.
112 Beitrag zur Frage der Ovarial-Veränderungen bei Blasen-Mole und malignem Chorioneptitheliom (changes in ovaries). J. Wallart.
113 *Relations Between Uterine Myomata and Heart.—Beziehungen zwischen Uterusmyomen und Herz. L. v. Lingen (St. Petersburg).

108. Prophylaxis of Streptococcus Infection Before Childbirth and Operations.—Polano argues that the female genital apparatus is constantly exposed to physiologic wounds by the conditions of menstruation and childbirth, and that the natural resisting powers of the individual might be enhanced by artificially rendering her immune to pyogenic infection. He has succeeded in accomplishing this in laboratory animals. He induced active immunization against the streptococcus and found that the animals became far more resistant to pyogenic infection afterward than the controls. The independent re-

searches of Landmann with living streptococci, of Bumm with attenuated and of Polano with killed streptococci all corroborate each other and confirm the possibility of influencing the organism in such a way as to reduce its susceptibility to pyogenic germs later. Polano's work with rabbits has absolutely established the harmlessness of the method and its efficacy and reliability. He tested the technic on himself before applying it in the clinic, and then tried it on 60 patients who had to undergo some gynecologic operation during or immediately after childbirth. There was no suppuration in any instance, but as this so seldom occurs at the Würzburg clinic, the material is too limited for definite conclusions. Polano, therefore, appeals to others to try this method of prophylaxis on a larger scale. He uses fresh human pathogenic streptococci without passage through animals. A little human ascitic fluid is added to the bouillon to "humanize" the culture medium. Streptococci from erysipelas, puerperal and scarlet fever, anginas and phlegmons were mixed for the tests, and the bodies of the bacteria were alone used. By this means 1 c.c. of injection material corresponded to 100 c.c. of the ascites bouillon or agar cultures. The bacteria are killed, centrifugated, a little phenol added and a suspension is made at the time with physiologic salt solution. He makes the injections in the pectoral muscles as causing less annoyance in lying or sitting than if made in the buttocks. There is a very slight general reaction, the temperature rose a trifle and the pulse rate was increased a little in the experiments on himself with twice the amount he used on others. He calls this technic "a means of inducing natural antisepsis in the individual." The organism is affected by it in such a way that it is able to offer a successful resistance to the streptococci and annihilate them at their first invasion.

109. **Perfect Laparotomy Cicatrix.**—Exact apposition of the layers of the abdominal wall is indispensable for a perfect suture and cicatrix. A special mode of suturing after incision of the linea alba was introduced into Küstner's clinic some years ago, and 157 patients thus treated have been re-examined lately. The results have been so satisfactory that Hannes describes his technic for the benefit of others. The peritoneum is sutured separately with catgut and tied. The single thread for the fascia and epidermis is passed through the fascia and then the ends are crossed and passed through the epidermis from below. The suture thus forms a figure 8, the upper half larger than the lower. Aluminum bronze wire is used for the figure 8 suture. From seven to nine of these sutures, not too close together, are required for a laparotomy. The wire is removed about the fourteenth day. The results are as fine with this simple technic as have been hitherto attained only by more complicated methods of incision and suturing.

110. **Ovariotomy During Pregnancy.**—Graefe reviews the cases reported since Heil's statistics were published, and adds 4 others personally observed. The mortality of ovariotomy during pregnancy is actually less than at other times, but this is due merely to the fact that a malignant ovarian tumor prevents conception. The pregnancy proceeded uninterruptedly to term in all but 2 cases. This can be insured by postponing the ovariotomy in case of a living child nearly to term. Out of 23 cases on record in which both ovaries were removed before the end of the fourth month, abortion followed in 4 instances, the percentage being about the same as for unilateral ovariotomy. Graefe believes that an ovarian tumor in a pregnant woman should be removed as promptly as possible. He operated by the abdominal route in his cases.

111. **Influence of Gynecologic Affections on the Blood.**—Leisewitz has been investigating the blood in 150 gynecologic patients. The examinations were made in the morning, after a light breakfast, the day before the operation. The findings were so constant and so characteristic that he declares that examination of the blood should never be omitted before any important operation for a severe gynecologic affection. It supplements the indications for operative or nonoperative treatment, especially in case of myoma and of innocent and malignant cystoma. When the blood is examined before the operation and again afterward, it reveals the influence of the affection and the improvement of the general condition after operation. Myoma and carcinoma have a decidedly unfavorable influence on the blood, inducing high leucocytosis, with great reduction of the hemoglobin content, but these conditions soon right themselves after removal of the growth. He classifies the findings in the various groups of gynecologic affections. In 3 cases of tubal abortion there was a hyperleucocytosis of 40,000 in one patient eight days after the rupture of the tube. There was no suppuration, but the findings suggested that there had been three separate hemorrhages during the interval before the operation. If the blood findings show a tendency to improvement in cases of myoma in which the indications for operation are dubious, non-interference for the time being may be justified if the blood is examined again every three or four months. In case the blood findings show a tendency to grow worse, operation should not be delayed. If the blood findings were very abnormal before an operation for myoma, the prognosis should be guarded. In case of low hemoglobin and small number of reds, the possibility of degeneration of the heart should be borne in mind.

113. **Relations Between Uterine Fibroma and the Heart.**—Out of 66 patients with uterine fibromas in von Lingen's experience, only 16 presented evidences of functional cardiac disturbance of the heart; 5 others had a murmur at the apex, probably due to anemia. The particulars of all his cases are tabulated, and the necessity for careful examination and watch over the heart in all cases of uterine myoma is emphasized. If slighty abnormal conditions are found in the heart, this is another indication for removal of the growth, as also for heart tonics. The prognosis is better than when the heart and vessels already present pronounced changes. In operating it must be borne in mind that a vaginal operation makes less demands on the heart than a laparotomy.

Books Received

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

DER ÄRZTLICHE RATGEBER IN BILD UND WORT. Atlas und Hausbuch für Gesunde und Kranke. Unter Mitwirkung von Dr. O. Bruhl, F. Cramer, etc., herausgegeben von Dr. med. fr. Siebert. Mit 245 farbigen Abbildungen auf 74 Tafeln und 481 schwarzen Abbildungen im Text. Cloth. Pp. 1024. Price, $6.50 net. München: J. F. Lehmanns Verlag. New York: Paul B. Hoeber.

MANUALE DELLE MALATTIE DELL 'OCCHIO Ad Uso Degli Studenti E Del Medicin Pratici Traduzione Italiana Sulla Quarta Edizione Americana. Con note ed Aggiunte del Dr. Edmondo Trombetta and Dr. Carlo Enrico May. Con 360 illustrazionie originali e 21 Tavole con 70 figure colorate. Cloth. Pp. 555. Price. L. 8. Torino: Unione Tipografico-Editrice, 1906.

VERHANDLUNGEN DER BERLINER MEDICINISCHEN GESELLSCHAFT aus dem Gesellschaftsjahre, 1904-1905. (Separat-Abdruck aus der Berliner klinischen Wochenschrift) Herausgegeben von dem Vorstande der Gesellschaft. Band 35 and 36. Paper. Pp. 468 and 594. Berlin: Druck von L. Schumacher, 1905-1906.

THE OPHTHALMOSCOPE AND HOW TO USE IT. With Colored Illustrations, Descriptions and Treatment of the Principal Diseases of the Fundus. By J. Thorington, A.M., M.D., 73 Illustrations and 12 Colored Plates. Cloth. Pp. 298. Price, $2.50. Philadelphia: P. Blakiston's Son & Co., 1906.

A TEXT-BOOK OF HUMAN PHYSIOLOGY. Including a Section on Physiologic Apparatus. By A. P. Brubaker, A.M., M.D. Second Edition, Revised and Enlarged, with Colored Plates and 356 Illustrations. Cloth. Pp. 715. Price, $4.00. Philadelphia: P. Blakiston's Son & Co., 1905.

PROCEEDINGS OF THE AMERICAN FOREST CONGRESS. Held at Washington, D. C., January 2-6, 1905, under the auspices of the American Forestry Association. Cloth. Pp. 474. Published for the Association by the H. M. Suter Publishing Co., Washington, D. C., 1905.

URIC ACID. The Chemistry, Physiology and Pathology of Uric Acid and the Physiologically Important Purin Bodies, with a discussion of the Metabolism in Gout. By F. H. McGrudden. Paper. Pp. 318. Price $2.50 net. Cloth, $3.00 net. New York: Paul B. Hoeber.

APPARATUS AND METHODS OF TESTING DISINFECTANTS. By A. I. Kendall, Ph.D., Acting Chief of Laboratory. Bulletin No. 1. Laboratory of the Board of Health Isthmian Canal Commission. Paper. Pp. 10. Panama: I. C. C. Press, 1906.

A SYSTEM OF SURGICAL NURSING. With an Appendix Containing Useful Formulæ, Emergency Drill, Etc., by A. N. M'Gregor, M.D., F.F.P.S.G. Cloth. Pp. 554. Price 9s. net. Glasgow: David Bryce & Son.

FIFTEENTH ANNUAL REPORT OF THE STATE BOARD OF MEDICAL EXAMINERS OF NEW JERSEY, 1905. Paper. Pp. 55. Trenton, N. J.: MacCrellish & Quigley, State Printers, 1906.

A HANDBOOK OF CLIMATIC TREATMENT, INCLUDING BALNEOLOGY. By W. R. Huggard, M.A., M.D., F.R.C.P. Cloth. Pp. 536. Price, $4.00. New York: The MacMillan Company, 1906.

PUBLICATIONS FROM THE LABORATORIES OF THE JEFFERSON MEDICAL COLLEGE HOSPITAL. Vol. II. Paper. Philadelphia, 1905.